B&B, track men in Chicago huddle

p. 17

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### STRUCTURES

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RAILWAY TRACK and STRUCTURES

1960 • Vol. 56, No. 10

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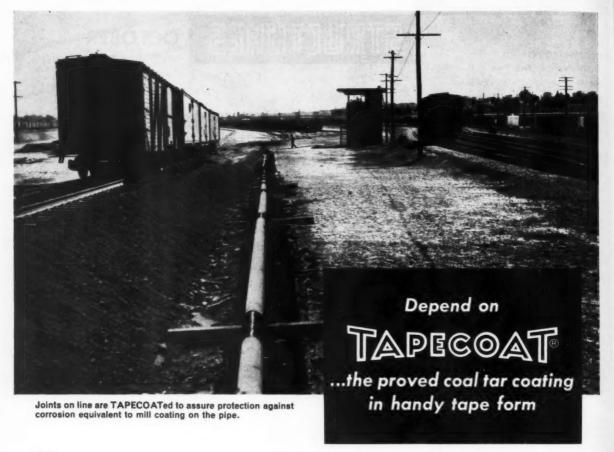
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#### Don't miss . . .

The Great Northern is using a hydraulic deck liner to increase output of its pile drivers. With drift bolts removed the liner quickly shifts the chords to permit piles to be driven.

... in the November issue

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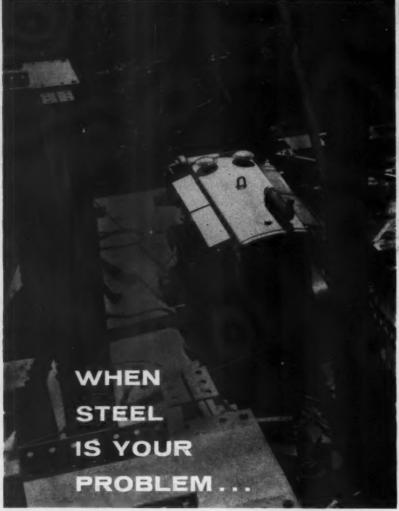
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Left: CP-365 Compressor at work on bridge structure. Above: Running up nuts on structural steel with CP-612 Reversible Impact Wrench.



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#### STRUCTURES NEWS NOTES

. . a resume of current events throughout the railroad world

The ICC has announced it has given final approval of the proposed merger between the Lackawanna and the Erie. The consolidation, which becomes effective October 15, will create a 3,200-mile system which will supplant the Norfolk & Western-Virginian as the biggest twentieth century merger of independent railroads. Erie-Lackawanna will be the name of the merged system.

Elsewhere on the merger front, President Stuart T. Saunders of the Norfolk & Western said he is "optimistic" about the prospects of a merger of the N&W and the Nickel Plate "in 1961 or 1962." A three-way merger of the C&O, B&O and NYC is "definitely out," C&O's President Walter J. Touhy told some 500 applauding stockholders in Cleveland on September 14. In the South, stockholders of the SAL and ACL approved merger of their roads in a special meeting held August 22 at Richmond.

AAR President Daniel P. Loomis has assailed a Corps of Engineers' report on inland waterways as "misleading" because it contains "glaring errors" resulting from "naive statistical maneuvering." The report purports to prove that the railroads could not absorb the annual increase in water traffic without large increases in their physical plant.

The AAR estimates a decline of \$91 million in net income for Class I railroads for this year's first seven months, compared with the corresponding 1959 period. The estimate puts this year's seven-months' net at \$248 million, compared with \$339 million last year. Twenty million dollars of the drop is accounted for by July's showing. The estimated net for that month is \$11 million, compared with July 1959's \$31 million. Thirty-one Class I roads failed to earn their fixed charges in this year's first seven months.

Secretary of Labor Mitchell is still "very hopeful" that a commission can be set up to study the work rules dispute. Following a meeting on September 7 with five operating union chiefs, he announced that the brotherhoods had agreed to give "serious consideration" to his proposal for settling the long-standing dispute, and also that both sides had agreed to set up six-man subcommittees for further discussions of the plan on September 14. Following that meeting, Mr. Mitchell announced that the parties had agreed "to continue the discussion in Washington on September 30."

The railroads' "strike-insurance" plan came under fire last month when the Brotherhood of Railroad Trainmen filed suit against the Long Island and 32 other railroads, charging "conspiracy" in setting aside money to be used for paying losses incurred by one of their number when subject to a work stoppage. The suit alleges that the Long Island received up to \$50,000 a day for the period of the BRT's strike against the carrier, and it asks triple "damages" to include strike benefits, wage payments, and other funds.

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BALTIMORE & OHIO - James W. Winger, maintenance engineer at Baltimore, Md., has been promoted to division engineer at Cincinnati, Ohio, succeeding Ben J. Johnson, Jr., who has been transferred to Baltimore. Frank M. Schilt, assistant division engineer at Newark, Ohio, has been promoted to terminal engineer at Baltimore, succeeding Frank J. Fice who has been promoted to senior engineer in the regional engineer's office at Baltimore.

In addition, the following changes have occurred recently: L. Byrne Waterman, engineer maintenance equipment at Baltimore, to principal engineer there; James E. Sunderland, assistant division engineer at Akron, Ohio, to supervisor of maintenance equipment at Baltimore; and Robert D. Bowick, resident engineer, to special engineer in the regional engineer's office at

Herbert L. Scribner, special engineer, retired recently after more than 46 years of service. Alexander G. Milkton, designing engineer of buildings, Baltimore, has retired after more than 40 years of service.

CANADIAN NATIONAL - J. A. Hermanson. design engineer, Montreal (Que.) yard, has been promoted to terminal design engineer at Montreal, succeeding J. C. Martin who has been promoted to assistant system supervisor terminal operation.

CHESAPEAKE & OHIO-Sidney O. Smith, assistant supervisor track at Grand Rapids. Mich., has been promoted to supervisor track at Benton Harbor, Mich., succeeding Albert J. Aquino who has been transferred to Traverse City, Mich. Mr. Smith is succeeded by Carl H. Williams, track foreman at Grand Ledge, Mich. Richard K. Pullem has been appointed assistant cost engineer at Russell, Ky.

DENVER & RIO GRANDE WESTERN-The following have been promoted to track supervisors on the Salt Lake division: Clyde L. Overholt and Harold T. Sothman, section foremen on the Pueblo division; and B. L. Warren, engineering assistant at Denver,

DULUTH, MISSABE & IRON RANGE-The following appointments have been made recently: Erick M. Johnson to division roadmaster at Proctor, Minn.; Joseph S. Gustafson to assistant division roadmaster at Virginia, Minn.; Helmer E. Holm to assistant division roadmaster at Two Harbors, Minn.; and R. G. Huston to general track supervisor at Two Harbors. John Meade, roadmaster on the Missabe division, has retired, effective August 31, after more than 38 years of service.

FRISCO—V. R. Copp, special engineer at Springfield, Mo., has been promoted to principal engineer there, succeeding Oscar Fischer who retired recently after more than 49 years of service. Mr. Copp is succeeded by B. E. Buterbaugh, construction engineer at Springfield.

GRAND TRUNK WESTERN-K. W. DeForest, assistant supervisor track at Battle Creek. Mich., has been appointed supervisor track

GULF, COLORADO & SANTA FE-J. J. Parrish has been appointed division engineer at Temple, Tex., succeeding R. E. Clancy, transferred.

ILLINOIS CENTRAL-J. W. Lager, supervisor bridges and buildings at Champaign, Ill., has been promoted to assistant engineer at Chicago. He is succeeded by G. G. Phillips, supervisor track at Bloomington, Ind., who is in turn succeeded by D. J. P. Paquette, supervisor track at Decatur, Ill.

C. R. Fulghum, assistant supervisor track at Champaign, has been promoted to supervisor track at Mendenhall, Miss., succeeding S. B. Powell who has been transferred to Vicksburg, Miss. Mr. Powell succeeds W. B. Harper, deceased.

LOUISVILLE & NASHVILLE-Elvin A. Asher has been appointed track supervisor at Ocean Springs, Miss., succeeding W. Oscar Benefield who retired recently.

MILWAUKEE-A. M. Olson, assistant general roadmaster at Chicago, has been promoted to general roadmaster there. R. H. Becker, roadmaster at Perry, Iowa, retired recently after 45 years of service.

NEW YORK CENTRAL-John Stang, division engineer at Chicago, has been transferred to St. Thomas, Ont., succeeding J. C. Houston, transferred.

NORTHERN PACIFIC-M. O. Woxland, assistant bridge engineer at Seattle, Wash., has been promoted to bridge engineer at St. Paul, Minn., succeeding C. E. Ekberg who retired on September 1. Mr. Woxland is succeeded by L. L. George, office engineer at Seattle, who is in turn succeeded by R. P. Cooley, assistant architect at Seattle.

NORTH WESTERN-C. H. Sincloir, assistant supervisor bridges and buildings at Milwaukee, Wis., has been promoted to supervisor bridges and buildings at Eau Claire, Wis., succeeding D. H. Johnson who has retired after more than 43 years of service. H. L. Gueller, bridge inspector at Chicago, has been promoted to assistant supervisor bridges and buildings at Norfolk, Neb. Sam Hanges, acting roadmaster at South Pekin, Ill., has been promoted to roadmaster there.

SOUTHERN-Doyle A. Chambers, assistant division engineer at Knoxville, Tenn., has been promoted to division engineer at Selma, Ala. He is succeeded by Rufus R. Pearce, track supervisor at Cordele. Ga., who is in turn succeeded by James H. Langley, rail supervisor at Knoxville. Farley E. Wolford, assistant track supervisor at Knoxville, has been promoted to track supervisor at Jacksonville, Fla. Herbert D. Minnis, Jr., and Rufus W. Key have been appointed track supervisor at Haleyville, Ala., and assistant track supervisor at Greenville, S. C., respectively.

Theodore M. von Sprecken, assistant to chief engineer at Washington, D. C., retired recently after 46 years of service. Herbert N. Hutchinson, track supervisor, retired recently after 37 years of service.

SOUTHERN PACIFIC—Joseph W. Ferguson, assistant division engineer at Sparks, Nev. has been promoted to senior assistant division engineer at Los Angeles, Calif., succeeding O. G. Lindo who is attending Stanford University under the SP's educational

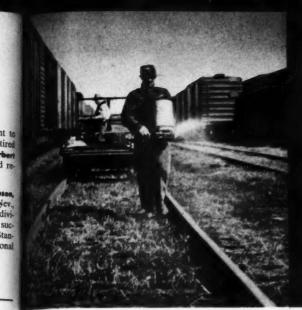
#### Biographical briefs

C. Russell Riley, 52, who was recently promoted to general manager, Eastern Region, of the Baltimore & Ohio at Baltimore. Md (RT&S, Aug., p. 10), was born at Baltimore and graduated from Johns Hopkins University in 1929 with a Bachelor's degree in civil engineering. Mr. Riley entered the service of the B&O in 1929 in the signal department, subsequently serving in various positions in the maintenance-of-way and engineering departments. He was promoted to assistant division engineer at Baltimore in 1943 and division engineer there in 1947. In 1953 he was further promoted to engineer maintenance of way, Eastern Region, also at Baltimore. The following year he was advanced to chief engineer, maintenance (system). Mr. Riley was promoted to chief engineeer, construction and maintenance (system) in 1958, the position he held at the time of his recent promotion.

Louis Lange, Jr., 36, who was recently promoted to assistant division engineer on the Seaboard Air Line at Tampa, Fla. (RT&S, May, p. 10), was born at Brooklyn, N. Y., and received his higher education at Lehigh University. He entered the service of the SAL in 1950 and was serving as assistant engineer at Richmond, Va., prior to his recent promotion.

Gerrit P. Nagtegaal, 53, who was recently promoted to engineer structural design of the Southern Pacific at San Francisco, Calif. (RT&S, Aug., p. 10), was born at Milwaukee, Wis., and graduated from the University of Wisconsin in 1933 with a Bachelor of Science degree in civil engineering and Columbia University in 1952 with a Master of Science degree in civil engineering. He entered railway service in 1943 with the Santa Fe as a transitman at Fresno. Calif., being promoted to bridge designer at Chicago two years later. In 1949 he joined the consulting engineering firm of Hardesty & Hanover as a bridge designer at New York, subsequently serving with the Bechtel Corporation as a job engineer at San Francisco. Mr. Nagtegaal entered the service of the SP in 1956 as a structural designer and supervisor at San Francisco, the position he held at the time of his recent promotion.

(More biographical briefs on page 52)



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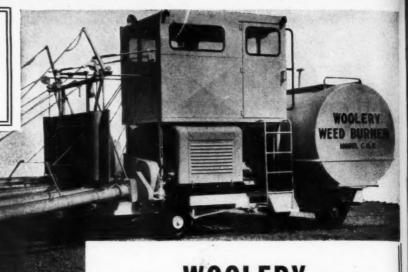


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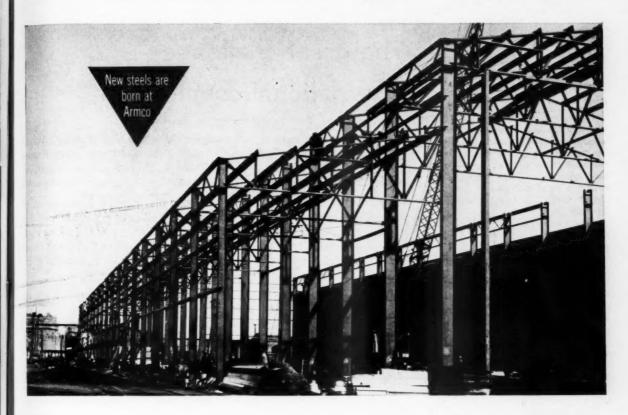
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#### How much service?

Occasionally rumbles of dissatisfaction are heard from suppliers who are called upon to send a service man out on a railroad to correct some minor difficulty in one of their machines. Their complaint is that a good operator or a mechanic could have corrected the trouble.

So the question arises, "How much service should a railroad expect from a manufacturer?"

When a machine is purchased by a railroad, the supplier usually has a representative on hand when the machine is unloaded and placed in service. The representative instructs the railroad men present on the operation and function of the machine. He will stay long enough—several days if need be—to see that the machine is functioning as promised and that the operator is properly instructed.

From that point on, it is logical to expect that the operation and care of the machine are the responsibilities of the railroad.

But it doesn't work out that way. The machine may perform fine under the first assigned operator, who was properly instructed, but not under the second, third or fourth. So, soon, an emergency call goes out to the manufacturer.

The supplier, anxious that his machine should perform as promised, hustles a serviceman out to the machine. Nine times out of ten, he finds that his original instrucions have not been heeded. Through poor maintenance and abuse, parts become loose and dirty so that a breakdown was just a matter of time.

Under such circumstances, should the manufacturer be expected to furnish free service repeatedly? Perhaps a service charge—enough to cover the service man's time and traveling expenses—should be made.

#### The great challenge-International communism

The greatest challenge now facing railroad M/W men, and all other railroad employees, is not the problems attached to their immediate jobs. Neither do it have anything to do with unfair regulation of the railroads, or subsidial competition, or any of the other factors threatening the future of the railroads.

Overshadowing these dangers, however real they may be, is the threat international communism to our institutions and the American way of life. Whe has been happening in Cuba, in Africa, in far-a-way Laos, at the United Nation and in outer space, should be enough to convince every citizen that the communists are engaged in a relentless drive to destroy the United States, economically politically and militarily.

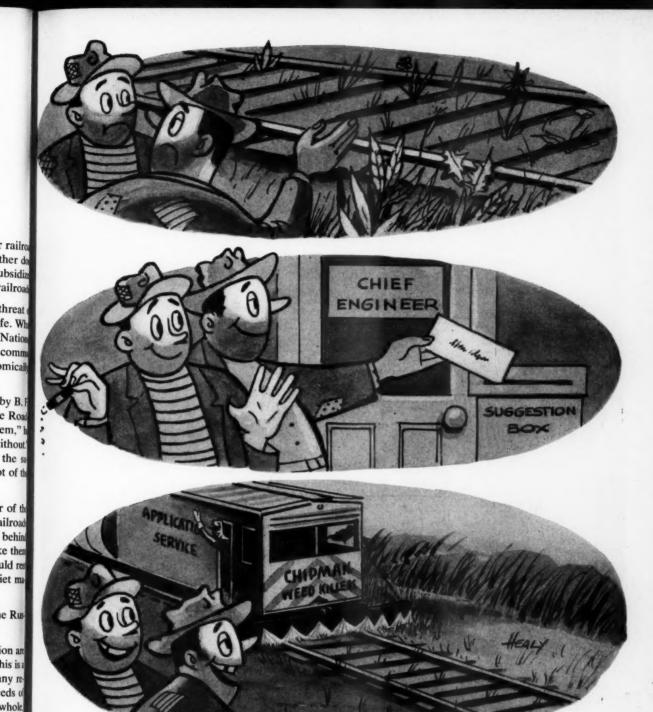
Last month this problem was brought home forcefully to railroaders by B.F. Biaggini, vice president of the Southern Pacific, in an address before the Road masters' and Bridge & Building conventions. "... Our American system," he said, "is being threatened as never before, both from within and without "From without," he added, "we are threatened by a philosophy of the supremacy of the state, which is diametrically opposed to our own concept of the supremacy of the individual."

Speaking before the same group, Frank R. Woolford, chief engineer of the Western Pacific, gave his impressions of a recent 30-day inspection of railroad in European Russia. While Russian railroads are "twenty or more years behind our progress" he said, all the employees are imbued with a desire to make then "the best transportation organization in the world." If our railroads should reson their laurels "then look out, as in not too many years ahead the Soviet matchine will certainly pass us by."

Mr. Woolford concluded with this succinct and sobering thought: "The Rusians have a definite objective ahead. Do we have one?"

This question arises: What can I do about it? People asking this question an apt to do so with a hopeless gesture as if to shrug off the whole matter. This is mental maneuver by means of which one seeks to evade the issue and any responsibility for doing something about it. This attitude contains the seeds of certain defeat. For the central problem is whether a free people can, as a whole shake itself out of the lethargy induced by good living and react collectively is such a way as to meet a threat posed by a system in which the great mass of people, stripped of all freedom, have no choice but to do the bidding of the ruling clique.

Mr. Biaggini is correct when he labels as "unsound" the widely prevalent idea that "our democratic principles will somehow automatically continue to survive and carry us forward." They won't survive unless we, as individuals, can bring ourselves to admit the presence of danger and out of that realization to develop a hardened resolve to meet the threat before it is too late. It all goes back to Frank Woolford's comment when he asked if we have an objective. If we don't, we are lost. It's that simple.



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All-concrete construction provides a building which is

weather-tight, strong and long lasting. There will be little upkeep for the life of the structure. And—the best kind of insurance—concrete is fire resistant.

The New York Central's use of concrete masonry towers (painted pastel colors) is just one way progressive railroads use concrete to get construction versatility and lower costs.

PORTLAND CEMENT ASSOCIATION A national organization to improve and extend the uses of concrete

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AUDIENCE listens closely to a speaker during one of the conventions' joint sessions. All joint and separate sessions were well attended.

#### Convention report . . .

#### Track, B&B men in Chicago huddle

Practical, workaday matters as well as the broader problems facing the railroads were discussed last month at the annual meetings of the Roadmasters' and B&B Associations. This report gives highlights of the two joint sessions and the separate sessions. The photographs show some of those who took part as speakers as well as a few of the railroad and supply men in attendance.

#### Management speakers urge more outside activities for M/W men

"For us in railroading, it is not enough just to be first-class railroaders. We are called on now, more than ever, to be first-class citizens as well. The future of our whole way of life demands it of us."

The speaker was B. F. Biaggini, vice president of the Southern Pacific, and he was addressing a joint session of the Roadmasters' and Bridge & Building conventions last month at Chicago. Mr. Biaggini's advice to the effect that railroad men should make their influence felt beyond the limits of their

business duties was echoed by a number of other management speakers that appeared before two joint sessions of the concurrent conventions.

While declaring that the degree to which railroad men discharge their citizenship obligations will have a "most important bearing on the future of railroading," Mr. Biaggini sought mainly to "stress the substantial influence you can bring to bear in determining whether our whole system of individual freedom and free enterprise is to survive."

#### They represented management at two joint sessions...



B. F. BIAGGINI said we have become "complacent as to our responsibilities as citizens."



G. M. LEILICH noted that in 1959, 68 per cent of fatal accidents occurred off the job.



H. C. MURPHY called for more effort to educate public in problems facing railroads.



J. HANDLY WRIGHT offered advice on how to promote good relations with the public.

#### Convention report cont'd



THREE past presidents of Roadmasters pose cheerfully. They are E. L. Anderson, Frisco (ret.), W. M. S. Dunn, C&O, and A. B. Hillman, BRofC-C&WI (ret.). With them is L. B. Cann, Jr., RF&P.



WHAT'S NEW in the South? W. C. McCormick, SAL, R. H. Carpenter, MP, both officers in the Roadmasters' Association, and Royce Kenshaw, Kershaw Manufacturing Company.



E. J. BROWN, chief engineer, Burlington Lines, and president, AREA, brought greetings from that association.



GREETINGS from Association of Track & Structure Suppliers were extended by President L. E. Flinn, Dearborn Chemical Co.



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INVITATION to banquet was extended by Ray T. Johnson, Jr. (Mid-West Forging & Mfg. Co.), first vice president of AT&SS.

"From without," he said, "we are threatened by a philosophy of the supremacy of the state, which is diametrically opposed to our own concept of the supremacy of the individual. From within we see the effective workings of strong pressure groups whose interests are often contrary to our democratic principles."

The trouble has come about, Mr. Biaggini believes, because "we have become complacent as to our responsibilities as citizens. We have tended to become so busy and so engrossed in our personal and business affairs in these fast-moving times that we have allotted less and less of our time and energies to preserving and sustaining the basic political concepts which have made all this progress possible."

To counteract this tendency he believes it is important, first, "to take the trouble to study the key issues facing our country—foreign policy, defense, inflation and the need for eliminating all forms of waste in government. And the second important thing is that we work actively in support of what we believe in."

Another speaker — H. C. Murphy, president, Burlington Lines — called for more effort on the part of railroad men to educate the public in the problems facing the carriers as a result of the "fiercely competitive struggle" in

which they are now engaged. After outlining these problems in detail Mr. Murphy declared that "one of our pressing needs is to educate people to the need for a realistic, modern, framework of public-interest regulation that not only permits but encourages development and full utilization of the modern-day railroad plant."

Some practical hints on how individual railroaders can help promote good public relations were offered by J. Handly Wright, vice president, Public Relations Department, AAR, in an address entitled "Public Relations — Responsibility and Opportunity." Noting that there is a "vast ignorance" on the part of the public and lawmakers regarding railroad problems, Mr. Wright cited what he called the oldest rule of public relations, namely, "actions speak louder than words." Good public relations, he said, is really nothing more than "good manners—good

corporate manners." There is no "mumbo-jumbo" involved in winning friends for the railroads, he declared; it is simply a matter of "acting in such a way as to make people like you."

Even in the realm of accident prevention there is much in the way of education railroad men could be doing off the job, according to G. M. Leilich, vice president operations of the Western Maryland. Speaking on the subject "Safety Is No Accident," Mr. Leilich backed this contention by pointing out that in 1959, 32 per cent of the fatal accidents occurred at work, and 68 per cent away from work.

"All of this points to the very obvious fact that industry cannot ignore accidents which occur other than at the source of work." Elaborating on this thought Mr. Leilich noted that off-the-job accidents cause inefficiency on the job, loss of production and other complications resulting from absenteeism.

#### Pictorial report on railroads in Russia

Speaking before one of the joint sessions, Frank R. Woolford, chief engineer, Western Pacific, told the story of his recent trip to Russia. As part of an exchange inspection team Mr. Woolford spent a month inspecting and photographing Russian railroad facilities. His story included the showing of many of these pictures. From these RT&S has made a representative selection which will be presented in November.



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NEVER A DULL MOMENT when these two, R. G. Simmons, Milwaukee Road and J. E. Eisemann, Santa Fe, get together.



REGISTRATION of members of the two railway associations was over 1200 members and guests, which is high for an off-exhibit year. It began with a good start on Sunday afternoon, when 269 signed up, and continued strong on Monday and Tuesday.



BOSTON & MAINE was represented by O. C. Benson, who presented a committee report, and H. A. Thyng.

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TIME OUT was taken by W. B. Roof, Armco, and D. F. Apple, C&O, to enjoy a chat in a corner of the Astoria Room.



ORIOLE FANS from Baltimere, D. H. Pittman, Linde Co., and R. J. Hollingsworth, B&O, were smiling then.

#### Track men discuss M/W organizations, deferred work, rail and reducing delays

With today's mechanized track maintenance, it was logical that one of the four subjects considered during the Roadmasters' sessions would be on the types of organization required.

The report of the committee was based on answers received from many railroad officers who were questioned as to what type of organization was needed to obtain the greatest utilization of track equipment for realizing the maximum return on the investment.

The replies indicated that, while it would be expected that organizations would differ for main tracks, branch lines and yards, many roads use the same general type of organization for all types of work. However, where section crews are used, the mileage allocated is greater for branch lines and terminals than for main track.

This committee noted that the trend is toward having inspectors cover track inspection over long territories; small compact district of division maintenance crews for handling chore work; division or system gangs for tie and surfacing, rail-laying and special major projects; and the use of trucks and rail-highway vehicles for the transportation of men and materials.

Because of traffic fluctuations, almost every road at some time or another must defer needed repair and replacement work. This creates problems for the supervisors. A committee reporting on this subject stated that the logical thing to do under such circumstances is to concentrate on those things which will most affect the operation of trains.

Since fouled ballast results in deterioration of line and surface, the committee felt that the use of a ballast plow or scarifier to throw the ballast away from the ends of the ties, allowing it to dry out, then plowing it back, is a simple means for correcting this situation.

The need to maintain track in good line, surface and cross level is important, said the committee, as the lack of proper maintenance of these items has a snow-balling effect on the track. Hence, these items can be deferred only for comparatively short periods.

"To assure safe train operation and to provide smooth-riding qualities to the track," said the committee, "it is essential that turnouts be properly maintained. This is a 'must,' regardless of financial conditions."



S. E. TRACY, president of Roadmasters' Assn. and supt. wk. equip., Burlington Lines, directed sessions of that group.

The committee admitted that deferred maintenance taxed the ingenuity and resourcefulness of a roadmaster or supervisor. But it felt that, "by thoughtful planning, careful supervision, conscientious training and instruction of all involved personnel, he could keep his railroad in safe condition under very adverse circumstances."

How is rail inspected to determine its need for replacement? This was the subject of a report by another special committee. It pointed out that, because a section foreman is directly concerned with the safety of his track, the request for rail replacement usually originated with him. The roadmaster or track supervisor then inspected the rail and, if conditions warrant, a re-

#### Convention report cont'd



SWISS PROFESSOR, David Genton, Polytechnical Institute of the University of Lausanne, meets J. W. Christoff, Mannix International, F. R. Woolford, WP, and W. M. S. Dunn, C&O.



SUPPLYMEN F. O. Johnson, Jr., and A. L. Tilsley, Colorado Fuel & Iron, J. R. Thompson, Railway Track and Structures, and Lloyd Woolery, Woolery Machine Company, have an impromptu huddle.



THE TWO NEAL BOYS, C. E. and G. W. Charile is past president of Roadmasters and Gordon is a director. Not related.



TWO MORE past presidents of the Roadmasters' Association E. L. Banion, Santa Fe, and H. W. Kellogg, C&O.



WEST MEETS EAST when W. J. Jones, Southern Pacific, gets together with E. M. Hastings, Chesapeake & Ohio.

quest is forwarded by him to his supervisory officer.

Factors considered before recommending rail renewal are the condition of the rail base, ends, head and surface, line, detector-car records, history of service failures and defects, traffic tonnages and rail transposition.

How can delays to work equipment and roadway machinery be minimized? This was the subject of another committee report which constructively suggested several measures for bringing about the desired results.

To the manufacturers, the committee suggested that standardization of component parts of different types of equipment would be helpful. Also, standardized controls would eliminate confusion on the part of the operators in becoming familiar with the operation of different machines.

The committee recommended that responsible railroad officers be constantly on the alert for new machines to replace obsolete units. It felt also that more diversified machines, capable of carrying out more than one work operation through various attachments, were necessary. This would permit greater utilization of equipment and less idle time. Between seasonal and intermittent jobs, the equipment should be shopped and repaired, according to the committee.

The need for competent and trained operators was discussed. The committee believes that good operators could do much to eliminate delays by spotting and repairing minor troubles. Also, if they were given operators' manuals to study, they would know the proper fuels, oils and greases to use and could be held responsible for the proper lubrication of their machines. These manuals, the committee added,

also will provide information on the care and operation of the machines.

The complete cooperation of all supervisors was said to be essential. They can do much to reduce equipment delays by working with the operating departments for passing train traffic.

In addition to the four special reports, the Roadmasters considered reports of their three standing commitW

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#### **NEW OFFICERS**

Roadmasters' Association

In the election of officers, by the Roadmasters' Association, which was held on the last day, E. F. Snyder, assistant to chief engineer, Illinois Central, was advanced from first vice president to president; L. C. Blanchard, roadmaster, Chicago, Milwaukee, St. Paul & Pacific, was moved up from second vice president to first vice president; and R. H. Carpenter, engineer-maintenance of way, Missouri Pacific, and a director of the association, was elected second vice president. R. G. Simmons, general roadmaster of the Chicago, Milwaukee, St. Paul & Pacific, was re-elected treasurer, and Mrs. Ruth Weggeberg was re-elected to the position of secretary which she has held for several years.

Two new directors were elected to serve four-year terms. They are W. J. Jones, engineer maintenance of way and structures, Southern Pacific Company, and L. G. Lawson, roadmaster, Canadian National.



E. F. Snyder
President-elect
Roadmasters' Association

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MAINTENANCE ENGINEERS both. W. E. Chapman, Cent. of Georgia, and J. C. Jacobs, Illinois Central, pause for picture.



B&B MEETING ROOM was filled practically to capacity during illustrated address by J. W. N. Mays, assistant engineer structures, Pennsylvania. Mr. Mays told how the PRR had mechanized its bridge and building forces. This was last major feature on agenda.



HAPPY MEN were J. W. Storer and S. S. Hockenberry, both of the Osmose Wood Preserving Company of America.

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CROSSTIES were bound to be a topic when A. A. Cross, Bird & Son, and R. H. Miller, Lake Superior & Ishpeming, got together.



WHAT'S NEW in Europe? R. M. Jenner, Railway Maint. Corp., just back from trip, and W. H. Gardner, Wabash.

#### B&B considers inspection, planning, housing, heating, prestressed concrete

The safe condition of bridges is of paramount concern to all bridge men. Whether a bridge is safe or not is determined through periodical inspections, who makes them and what items deserve special attention were included in one of the five reports presented at the Bridge & Building sessions.

In connection with making bridge inspections, the committee stated that a complete record of each structure must be kept. Such a record will not only include a complete description of the bridge but should also show previous defects found and corrected.

This committee directed attention to the vulnerable points subject to failure in timber, steel and masonry structures. For each type the committee outlined a procedure of examination and probing for detecting defects and deterioration. With this information on hand, corrective measures can be taken.

Another report, very comprehensive, was presented on modern methods for automatically heating various types of buildings and included the costs involved. The most common types of automatic controls in use at

this time, the committee stated in its report, are pressure, thermostat, electronic eye and liquid level.

The use of coal for heating buildings of all sizes is decreasing rapidly, according to the report. Fuel oil likewise is decreasing in use, while electricity is practically prohibitive because of excessive cost. On the other hand, the use of gas, natural and artificial, has increased tremendously in the past 10 years, the report stated, because of its lower maintenance costs, clean and quiet operation, no handling and no need for storage.

Methods of heat distribution by steam, hot water, warm air, hot blast by unit heaters and panel-type radiant heating also were discussed in some detail.

The programming of bridge and building work can be based on predicted needs with more precision than most other maintenance, according to the report of another committee.

Some advantages cited by the committee for programming are that it avoids haphazard work and gives priority to urgent work; permits more control of the work; affords a plan for the purchase of materials; brings mod-



MEMBERSHIP in B&B Association is at alltime high, said President B. M. Stephens in his opening address.

ern assembly-line methods to the jobsite; minimizes duplication of costly equipment and tools; permits use of specialized gangs with minimum waste of labor; obtains better workmanship and materials at lower costs; affords management with an advance estimate of annual expenditures; and gives supervisory officers a continuing appraisal of the work accomplished.

Work programming, the committee stated, is based on the annual inspections. Hence, it is important that the inspection of a well qualified supervisory

While the overall idea of programming bridge and building work is not new, the committee stated, it represents the most thorough, workmanlike

#### Convention report cont'd



WESTERN MARYLAND has a three-man huddle in the corridor. It includes J. T. Derryberry, supvr. b&b, F. L. Etchison, ch. engr., and A. J. Davis, asst. supvr. trk.



MACHINES OF THE FUTURE are being talked over by Fred L. Ecker, Schramm, Inc., H. C. Fox, proc. engr., Southern, and F. W. Holsteis, Fred W. Holstein Co.



NEW PAINTS and how they should perform were discussed in address by John D. Keane, Steel Structures Painting Council.



A LAUGH is enjoyed by R. G. Angell, A. M. Byers Company, as he and G. H. Echols, ch. engr., Sou., have their pictures taken.



ALMOST \$1 MILLION has aiready been spent for B&B mechanization on the PRR, said J. W. N. Mays, asst. engr.-struc.

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approach if properly planned and executed. In fact, it is the only way for carrying out the work which can be justified to management, the report continued. If a railroad does not now have such a procedure, the committee urged that a start be made in this direction, even if only on limited applications.

There is a division of opinion among bridge and building men as to whether or not their men should be housed in highway trailers or outfit cars, according to a report on this subject. However, the committee making the report believed that highway trailers have a definite advantage for small gangs consisting of from four to six men which requires few large tools and heavy materials. The committee also believed that for the larger gangs of from 10 to 15 men, camp-car outfits probably would be better.

From the information it had received, the committee reported that it costs from \$2,500 to \$10,000 to convert a steel car for housing B&B forces, with maintenance costs running from \$200 to \$2,000 per year. Cost of new four to six-man trailers runs from \$2,200 to \$4,800 each, but no figures for maintenance of these vehicles were available.

A committee submitting a report on prestressed concrete described the two

basic types—pretensioning and posttensioning—of prestressed concrete. It pointed out that the manufacture of prestressed-concrete members requires special care and skills so that the services of specialists are required.

The use of prestressed concrete for railroad bridges, it said, permits longer spans with increased under-clearance and offers definite advantages in economy, availability of plant controlled units, speed in erection with minimum interruption to traffic, fire safety, pleasing appearance, and freedom from painting and maintenance.

A great amount of research is being conducted at universities, it reported, so that the time is fast approaching when standard prestressed-concrete members may be secured from a handbook in much the same manner as steel beams are now ordered.

#### **NEW OFFICERS**

**Bridge & Building Association** 

In the election of officers in the Bridge & Building Association, H. D. Curie, master carpenter, Baltimore & Ohlo, was promoted from first vice president to president; George W. Benson, division engineer, Central of Georgia, was moved up from second vice president to first vice president; John M. Lowry, chief engineer, St. Louis Southwestern, was advanced from third vice president to second vice president; and E. R. Schlaf, assistant superintendent water service, Illinois Central, and a director of the association, was elected third vice president. L. C. Winkelhaus, retired architectural engineer, Chicago & North Western was re-elected treasurer, and Mrs. Ruth Weggeberg was re-elected secretary.

New directors elected for three-year terms are: Shirley White, general B&B supervisor, Southern Pacific, and H. M. Wilson, supervisor structures, Pennsylvania.



H. D. Curie
President-elect
Bridge & Building Association



#### Mechanization for a short line railroad

The Louisiana Midland, about 78 miles long, wanted to have the benefits of mechanization. So it acquired a "package" of equipment in which each unit is a multipurpose machine. The railroad figures the savings will return the investment within about two years. This article tells how the "package" is being used to do tie-renewal and surfacing work.

• Mechanization of track work is not limited to the larger railroads. Small roads too, can take advantage of the cost-saving features of present-day machines. As an example, the Louisiana Midland, a road 78 miles long, took a leap in this direction by acquiring a Tamper Ltd. Multi-Gang package unit (see below).

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"The purchase of this work equipment by a small road is perhaps of more importance than it would be to a large road," said L. B. Williams, general manager, who is in charge of all operating, engineering and mechanical matters. "But, we're just as cost conscious as the larger roads. By investing in this equipment, we will effect savings which will pay out within about two years and we'll have a better maintained track." "Our president, H. H. Holloway, Jr., is progressive and encourages this mechanization," he added.

Ever since it was delivered to the railroad the equipment in the package has been used exclusively for tierenewal and surfacing work. However, when it has completed the amount of such work now programmed, the railroad figures it will have the equipment available for use, individually or in combination, to carry out a variety of other jobs, such as spot tamping, bolt tightening, track lining, etc.

Formerly, tie renewals on the Louisiana Midland were done by the "digging-in" hand method and the track surfacing was carried out with the assistance of four-tool tamping outfits. With the new equipment, the same work is done more uniformly by a gang comprised of two foremen, a machine operator and 10 men at the rate of about ½ mile of track per working day. This gang represents a saving of five men compared with the previous method. It is formed by combining the road's two section crews.

Some time in advance of the tie-andsurfacing gang, the local track foreman makes an inspection of the ties to get an idea of the number of renewals. This is not an easy task because no tie insertions have been made on this track for the past 12 years and the ties are partially buried in the ballast. An average of about 360 ties per mile is renewed

Following the inspection, about 10 cars of washed-gravel ballast are unloaded by the section gang, and spread on one mile of track. This is sufficient

#### Description of package equipment

The Multi-Gang Package Unit consists of four hydraulically operated machines. They are designated Main Car, Hydrill-bolter, Spike Hydrejector-Tie Hydrenewer, and Comboliner.

The Main Car is the production tamper machine. It has a split cross-head, each side of which works independently of the other. This machine also serves as the transport unit for the men and for the other machines of the package outfit. It is equipped with a hydraulic tail ramp over which the three smaller machines can be rolled up to the deck or down to the rails. It has three operating controls, one for each tamping head and the other for propulsion and braking of the car.

A special feature of the Main Car is its ability to remove itself, together with the loaded machines, from the track at virtually any location. This is accomplished by the provision of a crawler track near each end of the machine. These are powered and enable the machine to be steered like the conventional bulldozer.

The Hydrillbolter is a combination rail drill and bolting machine. The bolter has a single control lever and has an automatic change from high-speed low-torque for running up nuts to low-speed high-torque for nut tightening. An attachment adapts the machine for rail-drilling operations.

The Hydrejector-Hydrenewer is a combination spike puller and tie remover. It has a transverse carriage to facilitate the movement of the puller from one rail to the other. An attachment converts the machine from a spike puller to a spike driver.

The Comboliner is a combination of a powered jack and a track liner. It has rail dogs which automatically engage the rails and a hydraulically operated foot plate which lowers into the crib. A vertical hydraulic ram at each end of the foot plate effects the track raise. A cross-level indicator assists the operator in obtaining the correct horizontal relationship of the rails. When lining track, the operator inserts two lining anchors in the cribs

and operates the foot-plate ram.

RAILWAY TRACK and STRUCTURES

#### Mechanization for a short line cont'd



After the gravel ballast has been spread, the track is raised by the Comboliner, a combination powered jack and track liner, and the ties are tamped by four men.



The next machine is the Hydrejector-Hydrenewer unit, which is used to pull the spikes from the old ties, eject the old ties and insert the new ones.

for making a 4-in average raise and for filling out the ballast shoulders. Then new treated oak crossties are distributed by work train. been

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The lead unit of the gang is the Comboliner, a combination powered jack and track liner, which is used at this point to raise the track. A trackman operates the powered jack and raises the track to the height signaled by the foreman, who sights forward to a high spot in the track. No spot-board is used because the foreman wants to hold the track raise within practicable limits.

The ties are solidly embedded in the old ballast. Because of this and also because the 75-lb rail is so limber, it is usually necessary for the Comboliner to be used at four points along each 33-ft rail. At each point where the track is raised, four laborers tamp the raised tie at the desired height.

In the next operation, which involves renewal of the ties, the Hydrejector-Hydrenewer unit of the equipment package is used. This machine first pulls the spikes from the ties to be renewed. Then, in one operation, it pushes out the old tie while pushing in the new one.

Just ahead of this machine, a laborer is used to shovel ballast from the tops of any ties which have not come up with the rails while the track was being raised but had remained embedded in the ballast. He also sets the tie plates and the pulled spikes to one side. The second foreman inspects the ties and places keel marks on the ball of one rail to designate the ties to be taken out. He also serves as the operator of the machine. A laborer pulls the new ties into position for insertion; then he and another laborer dig the ballast away from the ends of the ties to be renewed. When a new tie has

## DALLAS DALLAS

#### LM forms part of key route in South

The Louisiana Midland, connecting with the Mississippi Central, the Louisiana & Arkansas, the Missouri Pacific and the Illinois Central, serves primarily as a bridge railroad for can destined to points east and west of New Orleans. By routing cars over this route (known as the "Natchez Route"), shippers save at least 12 hours in travel time over a route that would take the cars in and out of New Orleans. The road is owned by the Holloway family, which also has interests in gravel-pit enterprises.

The LM has three road-haul diesel

been inserted, the two laborers reapply the tie plates. The tie-renewal operation proceeds at the rate of one tie inserted about every three minutes, with from 100 to 125 ties being inserted each working day.

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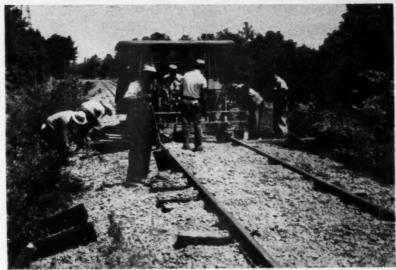
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The main car of the Multi-Gang equipment package is the next unit. This machine, run by a machine operator, does the tamping. Two laborers nip the ties and shovel ballast to the tools while the ties are being tamped. At the time this gang was observed, the tamper was pressing closely behind the tie-renewal operation. Ordinarily, these machines work a day apart but, owing to a recent holiday, both units had started at the same point. Spiking is done later by hand.

A Kershaw Ballast Regulator is used for dressing the ballast shoulders. This machine is manned by the machine operator.

When clearing for trains, all of the smaller machines are removed from the track where they have stopped work. Each of these machines is removed by one man and all are in the clear in about 11/2 min. Although the main car could be removed from the track at any suitable location, it is usually run to the nearest road crossing where, using the powered crawler tracks provided near each end, it is run into the clear in a matter of a few minutes. At the close of each day's work, the smaller machines are rolled up the ramp provided at the rear of the main car, and are carried by it to the point where the equipment is parked for the

Speaking of the results obtained with its new equipment, Mr. Williams said: "The work goes faster and we get a better job. Also, the men work better and don't go to sleep as they do with hand tools."



3 With the track raised on gravel ballast, the machine was able to renew ties in a single operation. It ejected the old ties by pushing in the new ones.



4 The main car of the Multi-Gang outfit does the tamping. A rear ramp enables the smaller units to be rolled up onto the main car and carried to and from the jeb.

locomotives and 13 cars. Trains operate at a speed of about 25 mph. The track is comprised of 75-lb rail (laid with square joints), tie plates, rail anchors and good treated-oak crossties. Washed-gravel ballast is used, being placed to a minimum depth of 6 in under the ties, but this may be increased to as much as 1 ½ ft in swampy areas.

There is a total of about 30 men in the track department. But their duties are not confined to track work. When necessary, they also work on bridges and buildings, under the direction of a B&B foreman, and they provide the labor needed when locomotive and car repairs are to be made.

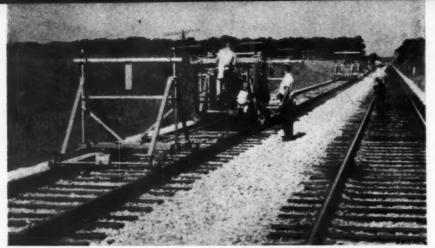
When engaged in the latter work, they are directed by the mechanical officer. All of the men live at home and are transported by both trucks and motor cars.

The LM owns a Burro crane and a 40-ton wrecker for lifting heavy materials. The small amount of rail needed is purchased from the L&A and various other sources. Repair rails are obtained for the most part from side tracks formerly serving saw mills but which have been made unnecessary because of the loss of this traffic to trucks.

A derailment or a washout is a vital matter on this small road. On such occasions all hands are called upon to assist in restoring service on the line.

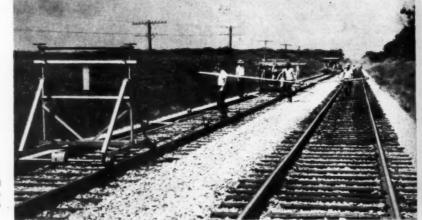
The general manager is in constant touch through radio communication with all train operation over the road. On some occasions, the radio was used to inform him of automobile accidents, as well as of trucks striking bridges at railroad underpasses. He was able to reach the site and take photographs before the vehicles were moved, enabling him to place the responsibility on the party or parties at fault.

Theft is another problem for a small road. On more than one occasion, thieves have taken rail anchors, tie plates and other track materials. On one occasion they even removed a running rail from an industrial track.



#### 1. Starting shift

SMOOTHING operation is halted when the gang reaches a place where the track supervisor wants to take out a short sag about 10 rails long.



#### Adding buggies

TWO-WHEEL BUGGIES are inserted ahead and behind the raising machine to obtain the correct distance between it and the carriages.

When track gangs doing smoothing work\* on the Grand Trunk Western hit a stretch that needs raising out of face only about 15 min is needed to lengthen the wire-type "sighting" device used by inserting the necessary two-wheel buggies.

● Track-smoothing gangs on the Grand Trunk Western, which use the wire-type "sighting" device, occasionally encounter a stretch of track that requires an out-of-face lift, perhaps as much as 4-in. When this happens the length of the reference wires is increased to that needed for such work by inserting additional two-wheel buggies in the assembly, and the gang proceeds. This shift from one operation to the other is done in minutes. The GTW has three of these track-smoothing outfits.

While the percentage of track raising to track smoothing is relatively small—about 10 per cent—the fact that the shift from one operation to the other can be made with only a slight inter-

ruption to the progress of the gang is a matter of interest.

Equipment used by smoothing gangs on this road consists of a Nordberg Tamping Power Jack and Trak-Surfacer with 50-ft wire, a Jackson Track Maintainer and a Nordberg Trakliner with Line Indicator. The equipment is manned by 4 machine operators who work with the local track gang which includes a foreman, an assistant foreman, and 6 trackmen, two of the latter being flagmen.

Since the smoothing work is being done under traffic the track gang is

#### Quick shift-

used to remove the machines from the track to clear for trains, remove and replace road crossings as required by the work, and to perform numerous other jobs related to the smoothing operation or to the normal work asignment.

by w

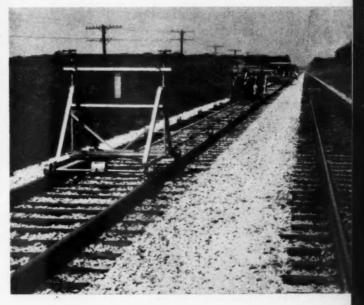
In the Trak-Surfacer as used for smoothing work the wires have a length of 50 ft. To adapt the device for out-of-face surfacing, additional two-wheel buggies with their separating tubes are inserted to bring the length up to 125 ft.

An example of changing from smoothing to raising operations was noted when one of the gangs was seen in operation on the GTW. The change-over was required when the gang encountered a low stretch, 10 rails long, where the grade had been held low to preserve the proper height for service

<sup>\*</sup>As used in this article the term smoothing, sometimes called "Smoothin'," refers to the spot correction of irregularities in line and surface.

#### 3. Threading wires

WiRE is stretched between the rear and front carriages and is threaded through the two surface-indicating devices on the track-raising machine. The distance between the front and rear carriages has been extended from 50 ft to 125 ft.



#### 4. Now surfacing

TRAK-SURFACER is now ready for carrying out the out-of-face surfacing operation. This changeover, completed in 15 min, is repeated in reverse when converting back to smoothing work. Raising unit of gang is still ahead of tamping operation.

#### From smoothing to raising

by a water column. Since then the water column had been retired, there-by clearing the way to removal of the sag. Within 15 min, the additional two-wheel buggies required to adapt the device for surfacing work had been assembled in place and the wires lengthened. The gang then proceeded to raise the section of track out of face.

The necessary additional ballast for the raise was obtained from the shoulders where sufficient material for this purpose had been deposited the year before. The only redistribution of forces required when shifting from smoothing to surfacing involved the removal of a man doing dressing work behind the tamper to a point ahead of the Tamping Power Jack for forking ballast between the rails. When the track had been raised through the sag the Trak-Surfacer was again shortened

to 50 ft and the work proceeded as before.

This particular gang was working on the eastbound main track about 60 miles east of Chicago. This stretch of track had been raised and surfaced the year before. The purpose of the smoothing work was to tighten up the track. The gang was protected by flagmen as prescribed by the rules. Two men forked ballast from the shoulders to the cribs where the ballast was slightly low on the inside of the rails.

In smoothing work, the operator of the Trak-Surfacer and Tamping Jack determined where the low spots were and raised the track as necessary, tamping the raised tie. In general, the practice was for the operator to raise the track at those points about ½ in higher than indicated by the wires so as to allow for the compaction that

resulted from the passage of the first train. The assistant foreman, by observing the hanging ties after the raise, chalk-marked the limits of the track to be tamped, putting the marks on the ties. The markings indicated whether the track was to be tamped on one side only or on both sides.

The Maintainer then did the tamping indicated by the chalk marks. Two men behind this machine smoothed the ballast section and tapped down any high spikes. The Trakliner did the finish lining.

When doing smoothing work, these gangs will average about a mile of track per day. When raising and surfacing, they will average one-third of a mile per day. The local supervisor of track determines when the track-smoothing gangs should raise the short sections of track.

An automatic rail-handling car, an end-finishing machine and a grinding machine utilizing abrasive belts, a "push-button" welding machine and several types of power rollers are features of new production line.

#### Three types of rollers



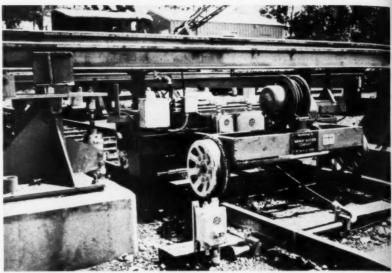
NINE power rollers like this move individual rails forward to various stations until they reach the welding machine.



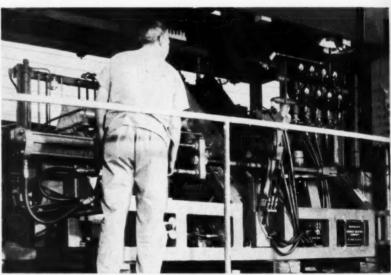
LIFT ROLLER designed to assist end-finisher by compensating for rail camber. Now obviated by improvements in welder.



THREE motor-operated pinch rollers like this move the welded lengths of rail forward (or backward) as necessary.



AUTOMATIC rail-handling car lifts 39-ft rails, one by one, from storage rack and deposits them on production line as needed. Car then goes back for another rail.



WELDING MACHINE has been improved to speed the operation and obtain increased automation. Push buttons now control operations of alining, clamping and welding the rails.

#### New machines for oxy-

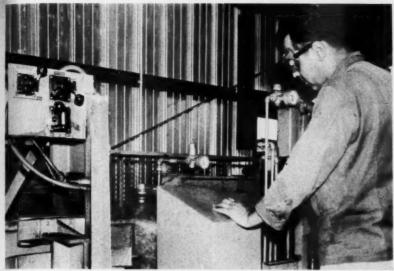
• Major improvements in the equipment for butt-welding rails by the oxy-acetylene pressure method have been announced by Linde Company, Division of Union Carbide Corporation. Result of the improvements has been to speed welding time and to cut manpower requirements by approximately 60 per cent, according to an announcement.

Purpose of the improvements was to achieve a high degree of mechanization and automation throughout the production line. The process of automation starts at the beginning of the line where an automatic motor-driven rail-handling car, or "buggy," operating on a transverse track, lifts single rails from the storage skids and carries them to the production line at a speed of 40 ft per min. There the car holds the rail until it is needed after which it deposits the rail on the power rollers that lead to the welder. The buggy then shuttles back to the rack to select the next rail.

of

01

in



END-FINISHING machine squares ends of rail in preparation for welding. Abrasive belts are used. Metal removed from rail end can be adjusted depending on condition of rail.



UPSET METAL is now removed from the ball, base and web of the welded joints by this grinding machine which, like the end-finisher, utilizes abrasive belts.

#### acetylene butt-welding

All these movements of the buggy are performed automatically. Such control is achieved primarily by means of limit switches. They are designed on a "fail-safe" basis. For example, if a workman should accidentally get in the way of the buggy it will immediately stop.

A rail placed on the production line is moved automatically by power rollers to the end finisher, a device that squares up the ends in preparation for the welding process. This operation is performed by abrasive grinding belts. After the leading end of the rail has been squared the rail is moved forward to permit the trailing end to be finished by another grinder at the same location. The squaring operation is handled by one man.

Adjustable guide plates at the end finisher make it possible to vary the amount of material removed from the rail ends during the grinding operation. A company spokesman points out that this may be about .002 in for new rail

and about .004 in for secondhand rail.

The welding machine, the next unit in the production line, has been improved in major respects to speed up the operation and to obtain increased automation. When a rail is brought into this machine it is abutted against the trailing end of the previously welded rail and the two rails are brought into alinement by a series of hydraulic dies. Gags fitted with rollers then hold the rail ends in position while they are welded. In this operation an end pressure of about 3000 psi is applied while an oscillating welding head, surrounding the rail ends, heats the metal to the plastic state.

#### **Push-button operation**

All the operations involved in preparing for making a weld—actuating the dies and gags and setting the clamps that apply the pressure—are controlled by push buttons. Other push buttons are used to release the dies, place the welding head in position, light the torches and start the oscillating motion of the head. When the upsetting action reaches a predetermined amount the torches are extinguished automatically. One man is stationed at the welding machine.

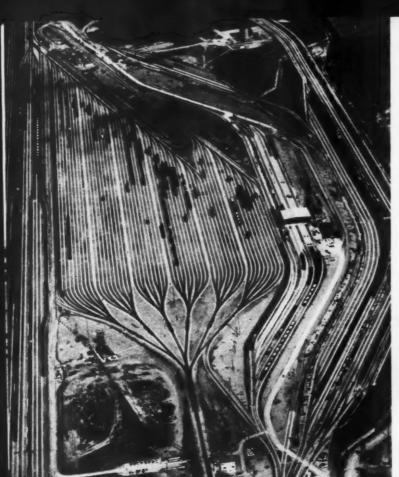
Beyond the welder the lengths of welded rail are moved forward (or backward if necessary) by three motor-operated pinch rollers. Automatic controls at the rollers are designed to equalize the load between them.

When a weld has been completed the length of welded rail is advanced by the pinch rollers a sufficient amount to position the new weld at the grinding machine. In this unit, operated by one man, abrasive belts are used to remove excess upset metal at the weld from the ball, base and web of the rail.

The grinding machine is mounted in a carriage so that it may be moved back and forth lengthwise with the rail as the different belts for grinding various parts of the rail section are brought into play.

The joints are inspected and finish ground in the usual manner. No change has been made in the normalizing operation, now considered optional.

Units of the new and improved types of equipment have, according to a Linde spokesman, been incorporated in the fixed welding plants the company has built at Harrisburg, Pa., and Ensley, Ala. The equipment is also available for lease to the railroads for operation by their own personnel.



#### NYC dedicates new electronic yard

On September 15, the New York Central dedicated its big new push-button electronic classification yard near In. dianapolis, Ind. Designated the Big Four Yard, it is expected to save 24 hr in rail shipments moving between the Mississippi river and the Atlantic seaboard. The road estimates that the new facility, which cost \$11 million, will pay for itself in less than three years due to increased efficiency and reduced operating costs. The yard occupies over 490 acres and has a capacity of 4,480 cars on its 66 miles of track, including 55 classification and 16 receiving and departure tracks. It is reported that a total of 3,000 cars can be classified per day and 160 cars humped per hour. Cars moving down the hump are controlled by a computer which regulates the braking devices to assure proper coupling speed. The computer measures the weight and rollability of the cars, distance car has to travel, track condition and wind velocity. In the photo below Alfred E. Perlman, president of the road (right) and John F. Nash, operating vice president, inspect one of the 55 Racor mechanical car retarders installed near the end of the classification tracks to bring cuts of cars to a stop (see RT&S, Sept., p. 36).

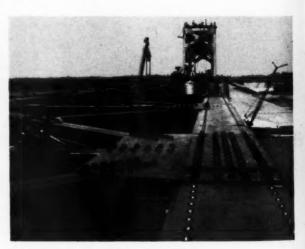


#### News briefs in pictures . . .



#### New passenger station for L&N

At Birmingham, Ala., the Louisville & Nashville has built a twostory modernistic passenger station. Located directly across the street from the existing station, the new reinforced concrete structure contains ticket offices, waiting rooms and a restaurant on the first floor and offices on the second floor. Aluminum windows are used throughout the building. General contractor was the Daniel Construction Company.



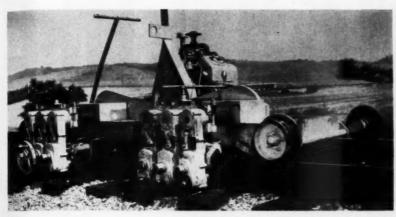
#### High-strength bolts for new bridge

The final two-thirds of the Burlington's partially constructed bridge at Qunicy, Ill., will be completed using high-strength bolts instead of field rivets. It is estimated that about 140,000 bolts will be required to complete the 2500-ft structure, which is being constructed by the Bethlehem Steel Company. The erection plans were changed due to the difficulty in finding experienced riveting gangs to keep the project on schedule.

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#### STRUCTURES PRODUCTS



Six holes bored by . . .

#### Portable rail drill

BORING of six holes simultaneously in rails being cropped in the track is now said to be possible by the introduction of a portable rail-drilling machine. The machine is designed to accompany a rail-cropping crew and to bore new bolt holes before the rail ends are cut off. It is said that bolt-hole spacings can be varied to suit different railend requirements, that the drill heads can be raised for clearance purposes and that the unit can be converted to a four-hole drill. Only one man, the operator, is said to be necessary

Designated the NCG-Obear Multiple Rail Drill, the machine is mounted on flanged wheels and is powered by a 24-hp, 4-cycle gasoline engine through a roller-chain power transmission. The six drill bits are said to feed automatically at a rate of 0.008 in for each bit revolution.

The machine is 34 in high, 108 in long and 36 in wide and weighs 2,300 lb. National Cylinder Gas Division, Chemetron Corporation, Dept. RTS, Chicago 11.



Power digger, it is operated by one man and is powered by an automobile, truck or tractor. Power is received through 20-ft flexible cables which are quick-clamped to the 12volt electrical system of the vehicle. The manufacturer states that with the vehicle's engine running to maintain generator charge the digger does not drain the battery. Extensions are available for digging holes up to 48 in deep. Speed King Manufacturing Company, Dept. RTS, Ensign, Kan.

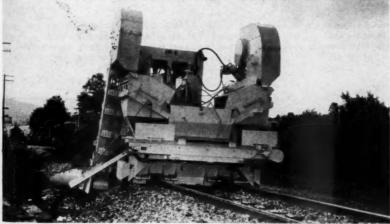


New long, slim head for . . .

#### **Concrete vibrator**

EQUIPPED with a vibrating head that is 2½ in. in diameter and 17¾ in long, the new Ingersoll-Rand 10V air-powered concrete vibrator is designed to deliver 15,000 and 9,000 vibrations per minute at no load and full load, respectively, at 90 psi air pressure. The new unit, which weighs 161/4 lb, is stated to be suitable for average building construction, walls, floor and roof slabs, medium columns and light foundation work. The manufacturer states that the heavy-duty vibrator will work successfully in concrete with a slump of at least 21/2 in. in sections up to about 30 in, or in stiffer mixes in thinner sections.

Features claimed for the unit include a continuously lubricated multi-vane motor, constructed from corrosion and rust-resistant materials; self-sealing throttle valve mechanism for preventing air leakage and entry of dirt and grit; completely sealed vibrating unit and a rolling throttle which can be set in any position from closed to wide open. Standard equipment includes a five-foot hose assembly and an air-line lubricator. Hose assemblies 10, 15 and 20 ft long are available as optional equipment. Ingersoll-Rand Company, Dept. RTS, 11 Broadway, New York 4.



Cleaning attachment for . . .

#### **Ballast distributor**

THE McWILLIAMS Ballast Distributor has been equipped with a cleaning attachment which enables dirt to be removed from all material picked up for distribution ahead of a tamping operation. The unit is equipped with screens which are vibrated by hydraulic motors and a belt conveyor which delivers the dirt clear of the track.

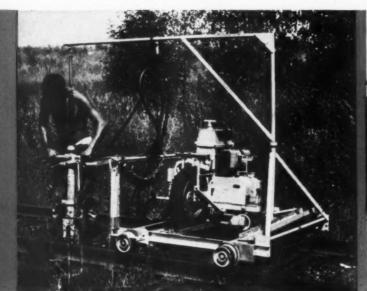
In addition, provision can be made for conveying the dirt across adjoining tracks. The cleaning unit may be applied to any existing McWilliams Ballast Distributor, according to the manufacturer. Railway Maintenance Corporation, Dept. RTS, Pittsburgh 30, Pa.

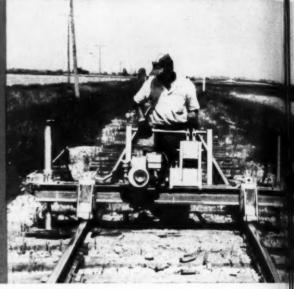
One-man operation for . . .

#### Portable digger

A NEW portable power digger is available for digging 3-in to 7-in holes to 32-in depths in all types of soils. Designated the Porta-

## Minimum number of <u>multi-use</u> Nordberg BRANCHLINE

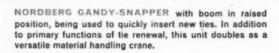




NORDBERG HYDRAULIC SPIKE PULLER makes quick work of removing old spikes prior to removing tie plates and ties. Specially designed carriage adds greatly to high production and low operator fatigue.

NORDBERG RAIL SNAPPER, with simple one man operation, is ideally suited for branch line work. A small, lightweight unit for raising both rails to either remove or insert tie plates in speeding up tie renewal.

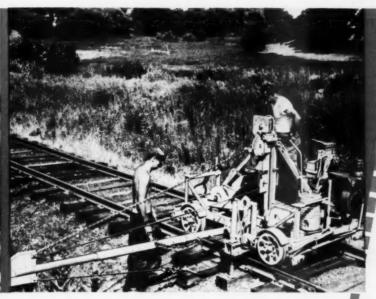






NORDBERG SPIKE HAMMER makes driving spikes fast and easy to speed tie renewal work. Spikes are driven straight, vertical to the tie and to the correct depth, performing a better job at less cost.

## Machines makes quick work of TIE RENEWAL



NORDBERG GANDY-SNAPPER shown removing old ties on typical branch line tie renewal operation. Note "Snapper" hydraulic ram pushing down adjacent tie to lift rail and clear the "high wood" of tie being extracted.

...another example of ORGANIZED MECHANIZATION using money-saving MECHANICAL MUSCLES®

If low traffic and irregular service has been the "excuse" for neglecting branch line maintenance, it will pay you to take a look at this problem in the light of "Organized Mechanization" with Nordberg Mechanical Muscles.

For, with a minimum number of multipurpose Nordberg Machines, you can do an efficient job at very low cost per mile. On branch line tie renewal, for example, the accompanying illustrations show how just four basic Nordberg units can be very effectively employed to efficiently handle a maximum number of tie renewal jobs, requiring a minimum number of men.

In these relatively simple operations, as in so many of the larger, more complex maintenance jobs, Organized Mechanization provides the most effective grouping of track machinery into efficient working teams. Here is a way of making the machines . . . which are individually efficient . . . even more productive—a way to handle specific maintenance-of-way jobs "better, faster and at lower cost."

Call or write for further details.

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NORDBERG Mechanical Muscles®



## NEW .... HEAVY-DUTY BANTAM RAIL-ROADER. offers Big 11-Ton Capacity!

BIG-JOB 11-TON CARRIER RAIL-ROADER MODEL JOINS JOB-PROVED 8-TON MODEL TO INCREASE WORK RANGE ON TRACK AND OFFE

Here's a big boost to B&B and track department production! Now you can have your BANTAM Rail-Roader mounted on either the job-proved 8-ton BANTAM carrier or on the new, heavy-duty 11-ton Rail-Roader carrier! New 11-ton Rail-Roader capacity lets you lift more...do more to round out the work range and extend the schedules of your B&B and track departments on track and off.

Work this bigger BANTAM on track for all kinds of heavy-duty right-of-way construction and maintenance jobs. Work it off track for maximum capacity on building or yard assignments. The same exclusive and simplified retractable-dolly-wheel design that made the 8-ton Rail-Roader so popular is used on the new 11-ton model to provide easy drive-on or off at any crossing. Special high-speed, full-reversing transmission gives the 11-ton Rail-Roader the same track speeds forward and reverse as in the 8-ton model. On highway, both models travel permit-free at road speeds anywhere.

Only BANTAM job-matches both carrier and upper machinery because only BANTAM builds both. Redecking, bridge restringing, cap changing, rail setting, materials handling—no matter what the job, BANTAM handles the work better and faster than any other rig in its class. Choose 8- or 11-ton capacity...your job schedules will speed up with a BANTAM Rail-Roader.

See how a BANTAM Rail-Roader can speed up your jobs and cut equipment costs. Ask your BANTAM railroad distributor for the facts . . . or write us.





11-ton Reif-Roader carrier is BANTAM-built for lasting service. Massim 15" x 6" box-beam frame assures rigid stability on heaviest lifts . . . rugged 6 x 6 drive offers maximum traction on track or eff.

The same unique dolly-wheel principle as featured on the 8-ton Raif-Roader eliminates derailing danger when crossing switches, road crossings, etc. Truck tires ride on the rails, sel on the ties or suspended in the air—eliminating binding and tearing, and giving greater stability, traction and safety at all times.

See How YOUR RAILROAD Can Pro



#### Eleven BANTAM-built attachments make every

Rail-Roader's work range unlimited! Whether your BANTAM is the new 11-ton model or the popular 8-ton model, with this one basic tool you can excavate, load, unload, ditch, erect, drive pilings, handle materials, etc. And with BANTAM's optional remote-control operation, you control all movements of the carrier from the operator's cab, saving time and manpower.





Popular BANTAM 8-ton-capacity Rall-Roader. Here's the compact rig that's proved itself on miles and miles of tracks and hundreds of job assignments for modern railroads. It's letter-perfect for your needs—travels anywhere, on track or off; gives faster work cycles no matter what the job.



SEE THE BANTAM
RAIL-ROADER IN ACTION!
You'll want to see one of the color
motion pictures of the BANTAM
Rail-Roader actually working on jobs
like yours—pointing up typically
big savings you can make. Arrange
a showing with your BANTAM railroad distributor.

New Literature —Write for Catalog RR-200, the new, fully illustrated bulletin that gives you complete information, specifications and application photos.



284 Park Street, Waverly, lowa WORLD'S LARGEST PRODUCER OF TRUCK CRANE-EXCAVATORS



RT-295

With the BANTAM RAIL-ROADER

improved

Ballast Distributor

## Cleans Bulled while positioning it perfectly for tamping

Now, correct ballast placement is supplemented by effective ballast cleaning—with important savings through using existing ballast.

Only this machine positions ballast for proper tamping! Picking up ballast from intertrack space and shoulder, the machine deposits in the volume depired on both sides of the rails for any raise.



Dirt is separated from the ballast by a vibrating screen, then conveyed clear of the shoulder. This feature is applicable to any existing McWilliams Ballast Distributor.







BOX 1888 PITTSBURGH 30, PA.

# STRUCTURES WHAT'S THE ANSWER?

# Inspecting stringers of ballast-deck trestles

When making an inspection of a ballasted-deck timber bridge 20 ft or more in height, what is the best way to determine the condition of the stringers? Explain. To what extent can decay be tolerated in these stringers before complete renewal of the deck becomes necessary?

#### Can probe underneath

By E. J. PRESTHUS **B&B** Supervisor Northern Pacific Tacoma, Wash.

Most of our treated stringers, whether on open-deck bridges or treated ballast-deck bridges, are usually inspected from the bottom. Our open-deck bridge stringers are covered with sheet iron and the first decay seems to occur at the bearing where the stringer rests on the cap.

All our bridges of this height have plenty of diagonal and horizontal bracing to climb around on and to make a good visual and bar inspection from the bottom. If the timber sounds hollow when tapped with the knob end of the bar, or if it shows a slight crushing or bulging, this indicates the timber is decayed even though it appears to be sound. Further probing or boring will verify this. The pointed end of the bar should not be used to jab the stringers full of holes unless the treated timber sounds hol-

We have 2,800 ft of ballast bridges, all over 30 years old, with no timbers changed to date. Caps and pile heads are the first to go and, until it becomes necessary to renew caps or to double-cap the bents, we are not too concerned about the stringers. At that time staging will be set, power tools will be on hand, and borings will be made to determine the actual condition of the stringers. However, we feel that the stringers will serve at least 40 or 50 years and, by that time, the entire bridge will be in line for a rebuilding job.

I would say approximately onefourth of the stringers could show considerable decay before the deck would require replacement. Of course, the amount of ballast between the bottom of the tie and the deck for proper cushion and load distribution, and also whether the bridge is on a branch line or main line, would also be determining factors.

In any event, a good look with an experienced eye will just about tell us when a timber is ripe for replacement, or when an entire bridge is due for replacement.

# Disturbing old tie bed

When renewing ties it was formerly considered poor practice by some track men to disturb the old tie beds. With modern practices and equipment does this rule still apply? If so, under what conditions? Explain.

## No need to do so

By D. H. YAZELL Assistant Engineer Illinois Central Chicago

First I should state that I am not one of the track men who considers the disturbing of the old tie bed when renewing ties to be a poor practice. This practice is probably buried with antiquity and probably had some basis way before the beginning of my track experience. If such a practice of not disturbing the old tie bed was ever considered poor, the addition of modern equipment at this time would have no effect on changing such a practice.

I do believe that in the "ancient" past there was some basis in fact for this practice and perhaps to some extent even to this day on some railroads with poor ballast conditions. First of all, when a load is placed on ballast, shearing stresses are set up which tend to cause the individual pieces of ballast to move in relation to each other. This can be demonstrated by visualizing a flat piece of wood placed on a pile of sand. Putting pressure on the wood will cause the individual grains of sand to move sideward and up in relation to the piece of wood, tending to bury it in the sand.

In the early days of railroading, ballast was merely the native soil encountered when laying track. Later, attempts were made to find better types of materials for ballast because of the failure of the soils in shear. Many of the first ballast materials used-bankrun gravel and cinders-was little better than soil. Later, as wheel loads increased, attempts were made to upgrade ballast; gravel was washed and graded in different sizes. Gradually, crushed stone of various types and slag were introduced. Crushed stone and crushed slag are now used extensively on most major high-tonnage railroads.

I think it is evident that when a tie has been placed on a ballast with a low shearing strength, the setting up or cementing of the lower type ballast aids materially in the stabilization of the tie under bearing, but decreases resilience or "give." Lack of resiliency will cause poor riding qualities, excess wear on equipment and greater mechanical wear on ties. This in itself is quite a topic and I shall not elaborate.

Since the "old-time" section foreman experienced the lack of bearing strength of the poor grade ballast, he was quick to see the value of not disturbing the old bed once it had "set up." With the present use of higher grades of ballast, better engineered roadbed and larger ties, there is no

reason for considering the disturbance of the old bed as a poor practice. Actually, if one would examine the condition of ballast under a tie, he would find the ballast to be in such condition that it could be picked up with his fingers. This, of course, is only true if the ballast has not become fouled (usually causing cementation). I believe that it is readily admitted by most track men that crushed stone and slag, or similar material, in unfouled condition are the best ballasts that can be obtained.

Another factor which should be considered is the size of the ties. When ties 6 in and 8 in wide were used extensively, especially on poor ballast, we have the condition of high bearing on a small area, which, as wheel loads increase, caused increased bearing pressures and subsequent failure of the ballast in shear. The wider 9 in tie in general use today delivers the higher bearing pressures over a larger surface

With the use of the thicker ties of today, it would be nearly impossible to use the same undisturbed roadbed bearing for the new ties, especially when a smaller tie is generally removed from the track. By a "smaller" tie I mean one actually smaller in size or one where the tie bed is shallower due to plate cutting or other deterioration. A larger opening under the rails is necessary to admit a new tie and the old tie bed must be dug out and lowered.

When renewing crossties today, many railroads use scarifier machines. These remove or loosen the ballast to several inches below the bearing of the new tie and tear up the old bed. It is also difficult to maintain ties over the old tie bed because of the need for spacing when renewing ties. This has been an argument against placing ties on the old tie bed for a good number of years.

When a practice has been in use for a number of years, there is a tendency toward lack of questioning its need. This is probably behind the thinking that to disturb the old tie bed is poor practice. We hope that the lack of a questioning attitude and the lack of seeking after truths are quickly becoming "poor practice." I do not intend to show disrespect to the old track men; actually, these men showed much ingentity and good thinking on this point. They did a good job with ma-

terials and conditions as they found

If criticism is due, the ones to be criticized are those who have allowed such ideas credence with little thinking or research. One of the main reasons we have quit such practices is because we can no longer afford such luxuries. Railroads of today can no longer spend extra time and money engaging in pursuits of questionable value. The track men of today have found they do not have money to spend placing the new tie directly over an undisturbed tie bed. When they found that their track was just as good or better than before, most of them ceased to think of disturbing the old tie bed as a "poor practice."

Again I say that the use of modern equipment in itself has not effected the need for such a change in thought. It has merely made such practice difficult to continue. Who, today, would hold up a \$50,000 to \$100,000 gang just to place each tie over an old tie bed? The need to do it has not existed since use of good ballast was initiated years ago.

Doesn't matter

By N. H. Maas Roadmaster Chicago & North Western Proviso, Ill.

It was formerly considered a very poor practice to disturb the old tie beds when installing ties due to causing irregularities in the surface of the track.

With the coming of various types of mechanized equipment for installing ties and surfacing, this problem no longer exists as generally the tie installation and the surfacing are coordinated. Also, in the removal of foul ballast by various mechanized units now available, the old tie beds are destroyed in the out-of-face operation and a complete new bed of ballast is constructed so as to result in uniform surface.

#### Loosen bed slightly

By W. J. GILL Roadmaster Denver & Rio Grande Western Denver, Colo.

When renewing ties in main track, I am in favor of loosening the old tie bed so that the new tie may be installed without disturbing the surface

of the track. The tie should then be nipped and tamped up to rail and the tie plates applied by springing the rail with a track jack.

There are several factors involved in this. The first is the fact that the old tie bed usually is cemented ballast. Also, the new tie is of greater thickness and length than the old tie due to the old tie being plate cut or of smaller original size. All ties used in main track on our line are now 7 in by 9 in by 9 ft.

If the old ballast in the tie bed is not loosened it will result in rough riding track. In many cases it will cause severe damage or breaking of the new tie being installed.

When renewing ties with some of the modern hydraulic or power inserters, and a tie-bed scarifier is used to loosen the old bed, it is sometimes necessary to have a man with a pick loosen the ballast under each rail where the scarifier cannot reach. This depends on the ballast condition. In secondary yard tracks, I prefer to make a light raise, enough so that ties may be renewed without disturbing the old beds. Usually these tracks need resurfacing and tie renewals at the same time and both can be accomplished with a minimum of labor.

# Maintain old beds

By C. H. TERRY Roadmaster Norfolk & Western Mullens, W. Va.

In my experience as foreman and roadmaster I have always considered it bad practice to break the old tie beds when renewing ties. As all track men know, it takes years to get a good solid tie bed. When the tie bed is broken and new ties are put in, the old ties that are left in the track are carrying the load of traffic until the tie bed gets solid.

This requires additional smoothing and can cause surface-bent rail if it isn't given special attention. I always give track a 2½ or 3-in raise so the old ties can be pulled out easily and the new ties can be pulled in without breaking the beds.

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There are some instances where old tie beds have to be broken. For instance, in tunnels and at the ends of bridges where the track has to be worked to get rid of foul ballast and cannot be raised. When lowering the

(Continued on page 42)



# Speed Yard Operations at Less Cost with Racor No. 22 Stand!

The word has been passed in a number of yards: ladders and other areas equipped with Racor No. 22 Switch Stands may be run through. Result: time and money saved by eliminating costly switcher stops and delays.

This husky switch stand will take any number of run-throughs and automatically complete the throw and the proper indication. The hand lever stays where it was.

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The Racor No. 22 Switch Stand makes switch point adjustment easy, too. Every stand is equipped with a heat treated, forged steel, adjustable crank eye that is actually stronger than rigid types. Accurate adjustments can be made without respiking stand.

If you are interested in speeding up your operations and saving money with this heavy-duty stand, let your Brake Shoe representative know.

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Quality products cut your ton-mile costs!

# Fairmont TIE HANDLER

One machine does all three tie-handling jobs—removing, inserting, repositioning!

Here's a piece of equipment designed to cut your tie-renewal costs two ways. Not only will the Fairmont W90 Series A Tie Handler increase production, but it handles more than one job—actually cutting the cost of three maintenance jobs with one investment!

The Fairmont W90 Tie Handler operates as a tie remover . . . a tie inserter . . . and serves to reposition new ties that are too far from the track for easy handling.

Equipped with a boom, and used where track is raised enough to free the old tie, the W90 removes ties quickly and efficiently. Used with the Fairmont W87 Tie Bed Scarifier, and minus its boom, the W90 inserts ties rapidly and economically.

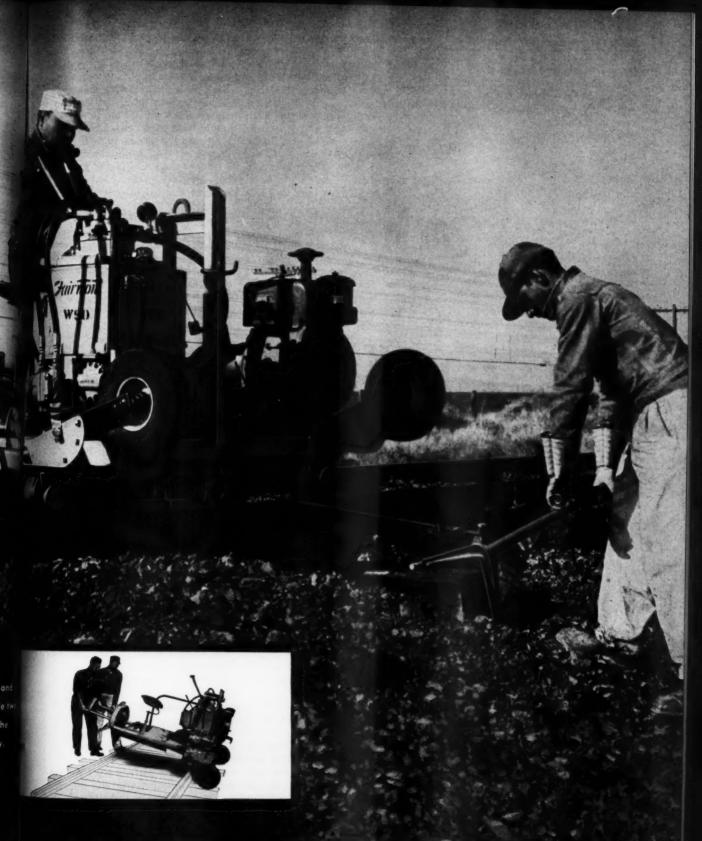
Operated by two men, the W90 has pneumatic set-off wheels and extension lift handles. Hydraulic power gives a smooth, steady pull that can be accurately controlled. Self-propelled, it has a low center of gravity and ample power for efficient operation in any terrain. Why not equip all your tie gangs with Fairmont W90 Series A Tie Handlers! Call or write us today for full information.







W68 SERIES A HYDRAULIC TIE REMOVER. Two men can push out old ties at one-a-minute rate. W84 SERIES B HYDRAULIC SPIKE PULLER. Requires only one man. Works both sides of both rails moving in one direction. Pulls up to 20 track spikes in one minute. W87 SERIES B TIE BED SCARIFIER. Operated by one man, the Fairmont W87 can dig a hardpacked, ten-foot tie bed in less than one minute's time. Pneumatic set-off wheels and extension lift handles enable two men to set the W90 off the track quickly and easily.



FAIRMONT RAILWAY MOTORS, INCORPORATED Fairmont, Minnesota

## What's the answer? (cont'd)

(Continued from page 38) track, the cut should be uniform so that a uniform surface will result. This will require close supervision of the cross level until the track has settled and the tie beds are solid.

## Not any more

By W. A. SCHUBERT Division Engineer (Ret.) St. Louis-San Francisco Chaffee, Mo.

The practice of not disturbing the old tie bed when renewing ties dates back to the old days when track on many railroads was not ballasted. To incur the wrath of the foreman, a man would only have to dig a hole larger

than needed to accommodate the new tie. This stemmed from a very good reason. Hand tamping with dirt could not compact the tie bed sufficiently to avoid a chuck hole after a few trains had passed over the new tie location.

The section foreman would insist that the men should first look over the tie to be inserted as to its size. In the old days little uniformity in the size of the ties existed. The man would then clean the hole sufficiently to insert the new tie to a snug fit. This would give the tie a solid seat and permit it to be spiked without nipping. Each man inserted, spiked and filled in his own tie.

With the beginning of the use of tie plates, this performance was made somewhat easier. If it was necessary to dig in a tie that required some disturbance to the tie bed, due to the new tie being larger than the old one removed, the new tie then could be tamped tight against the base of the rail and, after tamping, the rail would be nipped for application of the tie plate. This would make a slight hump in the track over the tie but, after passage of a few trains, the tie inserted would have good compaction and be solid with the ties on each side of it, thereby carrying an equal load.

This practice disappeared gradually with the use of modern practices. Ties are now inserted in general with the help of a track raise, sufficient to permit the removal of the old ties without digging them out and the insertion of the new ties without disturbing the old tie beds. This is more economical. Where tie gangs are used in advance of mechanized equipment, the ties are tamped as well as possible and followed by a general track raise with power equipment.

# Surfacing new rail

Should track be surfaced both before and after laying new rail? Why? What are the advantages and economies of doing this? Explain.

#### For winter laying

By H. G. DENNIS Engineer Maintenance of Way Chicago, Rock Island & Pacific Chicago

This question, of course, depends to some extent upon the surface and tie condition of the track prior to the laying of the rail and also the month or months when the rail is to be laid.

If the rail is laid in the winter, then of course, the track should be surfaced prior to the laying of the rail.

After new rail is laid, it should have either a very light general surfacing or should be spotted and lined.

#### Give light raise

By W. A. SCHUBERT Division Engineer (Ret.) St. Louis-San Francisco Chaffee, Mo.

Since the laying of new rail in general requires a job of timbering and surfacing, it is economically better to surface and timber the track in advance of laying new rail. Track should be given a slight surface, sufficiently to remove the old ties and put in new

ties. To surface the track in advance of the rail laying will also avoid surface kinks to the new rail, which in itself is sufficient reason why track should be surfaced in advance of the laying of the rail. In addition it will require less cribbing, since a portion of the old ballast has been used in the surfacing operation, which will expedite the rail-laying operation.

After rail has been laid, it should be followed up as closely as possible with a finishing surface.

#### Before and after

By JOHN STANG Division Engineer New York Central St. Thomas, Ont.

There are very definite advantages and economies in surfacing track, not only before and after laying new rail, but also during the rail-laying operation itself. It is entirely essential that all irregularities in surface, cross-level and line be corrected as closely as possible after the completion of the rail renewal. To insure uniform support for the new rail, the crossties must be

sound and all must be solidly tamped.

The best uniform support for the new rail within economical limits can be accomplished most effectively by the following three stages of surface tamping:

(1) A prior out-of-face surfacing (with the installation of new crossties if conditions warrant them.)

(2) Spot surfacing or smoothing during the daily rail-laying operation with a splithead smoothing machine, manned by an operator and an assistant foreman to sight for the proper raise.

(3) A final slight out-of-face surfacing raise after the rail is completely laid.

New rail must be treated with the utmost surfacing care. Longer rail life, increased surfacing cycle interval, smoother riding qualities and more economical track are the rewards for proper and efficient surfacing which must be done before, during, and after laying new rail.

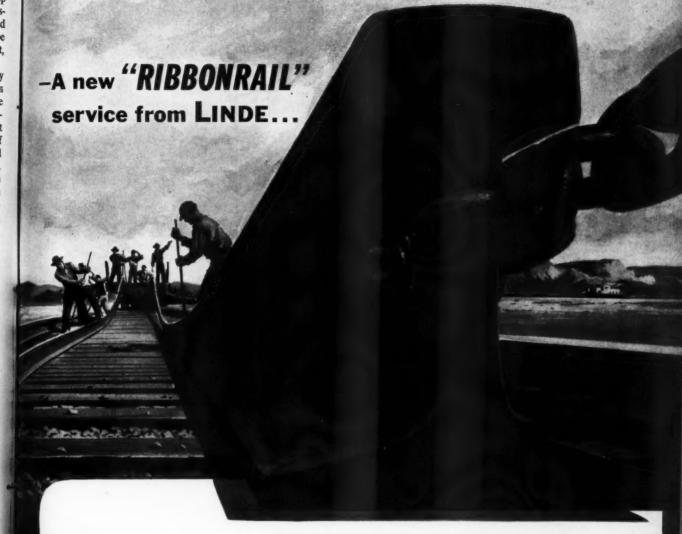
# Only afterwards

By T. O. MANION District Engineer Missouri Pacific Kansas City, Mo.

The time to surface track in connection with rail laying is a question as old as railroading itself, and the following can be considered only as one man's opinion:

Before the advent of powered track equipment, it was advisable to surface track ahead and behind rail laying

# CONTINUOUS RAIL PRE-WELDED AT THE MILL!



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LINDE is installing a contract welding plant in Harrisburg, Pennsylvania, near the Steelton Mill of Bethlehem Steel Company. Additional plants will soon follow. These plants will employ the famous "RIBBONRAIL" process of oxy-acetylene pressure welding—recognized for over twenty years as the top quality rail welding process—and used by over forty major railroads. For a single, predictable contract price, you can get rail welded in the lengths you need, and as you need them. Facilities will also accommodate the welding of relayer rail.

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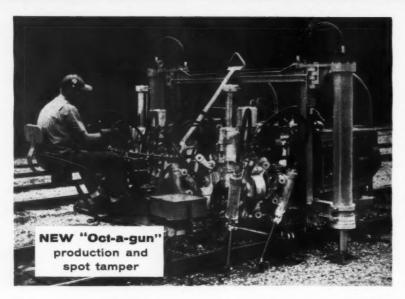
In Canada: LINDE COMPANY DIVISION OF UNION CARBIDE CANADA LIMITED TORONTO 7, CANADA.

Oxweld Railroad Department



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# Tamp 300 feet per hour with 35% less capital investment



SINGLE-RAIL SPOT TAMPER



UNIT TAMPER



RAIL SAW



RAIL DRILL

Here's a production tamper that out-tamps or equals the normal continuous tamping output of other machines that cost from one-and-a-half to four-times its price. Racine "Oct-a-gun" also jacks the track as it tamps, eliminating the need, time and manpower for a separate track jack.

"Oct-a-gun" tamps one or both ends of tie...stabilizes ballast at honest rate of 180 ties-per-hour. It tamps uniformly at every tie with hydraulic-powered, 1160 high-impact tamping blows per minute. One operator works twin 4-tool heads, tamping as solidly as desired...from directly below the rail base to 18" either side of rails. Integral hydraulic jacks with positive rail-grip and powerful, big-diameter cylinders provide smooth raise with clear sighting. Fast-starting hydraulic motors propel the machine from tie to tie... and move it to-and-from job or switch at 12 mph. Machine is powered by two 18 hp gas engines, can be removed from tracks in three minutes on standard prepared set-off.

Clip and mail the coupon for location where you can see "Oct-a-gun" tamper at work... or check for literature on any Racine machine.

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# What's the answer? (cont'd)

because it was often weeks or months after the rail was laid before the surfacing operation was completed. This resulted in many bent and damaged rails due to swinging ties and uneven bearing under the new rail. The surfacing before laying took care of uneven surface, but this operation did not care for spacing of joint ties, which was necessary with the slotted angle bars, making it necessary to follow up after the rail was laid to perform this operation and smooth up the track.

However, with the track maintenance equipment now available, a surfacing operation before the rail is laid is unnecessary as it is now possible to keep the follow-up work closely behind the rail laying. Also, the spacing of joint ties is now unnecessary.

Out-of-face surfacing should be carried out immediately behind the rail laying to insure good riding track and to avoid damage to the new rail. A spot tamper should be an integral part of the rail-laying equipment and should keep swinging ties tamped up, closing up each day where the rail laying ends. This of course, is to avoid rail damage.

Surfacing ahead of the laying is not only unnecessary but is detrimental to new ties applied and uses unnecessary ballast. The only advantage of surfacing in advance of laying rail would be to clear the cribs of ballast for use of adzers. However, the disadvantages far out-weigh the advantages and the added expense for surfacing, tie damage and extra ballast make this operation uneconomical.

#### Sometimes necessary

By E. F. SNYDER Assistant to Chief Engineer Illinois Central Chicago

In the interest of economy, track should only be surfaced once in connection with a new-rail relay program. Logically, the surfacing should be done immediately after the new rail is laid to provide a firm bed for what is really a new track structure. In jointed track the new joints rarely fall at the same locations occupied by the old joints and this makes it very important to follow the relay program with an out-of-face uniform ballast lift to insure each joint being bedded properly.



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# BALLAST CLEANING

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The need for reducing maintenance expense has resulted in programming tie renewals and out-of-face surfacing on a cycle basis to secure the maximum use of machines and to reduce labor and other related costs. This method of programming provides for a highly trained, efficient organization which is able to turn out much more footage per day. The end result, presumably, is a uniform, well-tamped

track requiring very little jointing up and smoothing over a very considerable period of time. Some roads, I understand, do not do any maintenance repair work on the track between the cycle program work. This period may be as long as five years.

There probably has been more optimism than can be justified in regard to the track structure holding its surface and line between cycle periods. Weather, seasonal changes, the lack of rain, or too much rain, seriously affect the track structure. Subsidence is a continous process and, since the subgrade is composed of many unbalanced components, this subsidence does not follow an orderly pattern. The joints settle unevenly and at high speeds have a tendency to line outward, producing line swings which, in combination with the low joints, can give freight and passenger equipment a very rough ride. Track in this condition begins to churn and the track ties will show serious mechanical wear unless the situation is corrected.

Should track reach this condition just prior to a new-rail relay program. considerable damage to the new rail can be prevented by giving the track a light lift to insure the new rail having a more uniform bearing. This light lift, or galvanizing as some track men refer to it, is justified to stop further damage to the ties and the old rail as well as to protect the new rail. If rail is to be laid early in the year, this light out-offace surfacing can be done the previous fall to insure a good track condition through the winter months. Where no tie renewals are made, the work can be done very rapidly and the expense of making this light raise will not be as great as the damage which can incur to the new rail while it is waiting for the surfacing work.

There can be no hard-and-fast rule as to whether track should be surfaced prior to a relay program. But, I am sure nearly all of us will agree that, to protect the new rail, the track should be given an out-of-face lift to stabilize and improve its riding qualities immediately after the new rail is laid.

The powerful symmetrical grip of

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# Several factors

By J. E. SHAW Roadmaster Texas & New Orleans Houston, Tex.

Surfacing is an expensive operation and should be undertaken only when it can reasonably be expected that the benefits to be derived will more than offset the expense involved. Therefore, any decision as to whether track should be surfaced both before and after laying new rail, or not at all, can be made only after carefully considering all factors obtaining at each location.

To fully evaluate all of the factors involved, we should first determine why a new rail relay is necessary. A few of the most common reasons are: (1) No (2) Un to handle heavier a (3) Ro hecause (3)

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(1) New construction.

(2) Upgrading an existing line, or track, to handle higher speed, more traffic and heavier axle loads.

(3) Replace rail at a particular location

because of:

(a) Excessive gage and head wear.
 (b) Line and surface bent condition due to poor maintenance, inadequate anchorage and/or unstable roadbed.

(c) Permanent deflection at the rail ends due to poor maintenance and ballast

conditions.

(d) Rail-end batter and wear in the fishing surfaces.

(e) Rail-end failures due to head-andweb separation and/or bolt-hole cracks.

(f) Fatigued or strained rail with consequent rapid development of defects leading to failure.

(g) Need for obtaining suitable rail for construction or relay of less important tracks.

Under item No. 1, unless the cost is prohibitive, ballast should be dumped on the new roadbed and smoothly bladed to a depth of at least 4 in before the ties and rail are placed. This will prevent damage to the crown, possible breakage of ties and almost certain damage of some extent to the rail. After the ballast has reached desirable compaction under construction traffic, additional ballast should be unloaded and the track given a final line and surface. This, of course, amounts to surfacing both before and after new rail relay.

Under item No. 2, the conditions existing at the time will dictate the necessary line of action. If the track has been maintained to a fairly good standard, making tie renewals, if necessary, and giving the track a smoothing raise as closely as possible behind the relay operation will be all that is necessary. On the other hand, if the embankment and the roadbed are unstable or otherwise inadequate, the drainage system is not up to par, above-average tie replacements are necessary, and the ballast is fouled, then it is readily apparent corrective measures must be taken ahead of the relay. The final smoothing and lining operation should stay closely behind the relay.

Under item No. 3, factor (a), there are many locations where it is not necessary to surface either before or after new rail relay. There are also many locations where existing grades cannot be changed and the smoothing operation must be accomplished by an effective spot-raising job. With reference to the other factors under this item, any decision reached will again be

(Continued on page 50)



Model 210 A-W Hydraulic Crane, equipped with clamshell attachment on 10-ft. boom extension performs yard maintenance work at the C&O's Plymouth Yard in Michigan.

C&O terminal supervisor of track says:

# Maneuverable, maintenance low . . . Austin-Western Hydraulic Crane good for all-around work

"The Austin-Western Hydraulic Crane is a good all-around piece of equipment for railroad terminal maintenance work," comments Harry Haines, supervisor of track of the Chesapeake & Ohio's Detroit Terminal.

#### Goes anywhere to do anything

Mr. Haines adds, "This piece of equipment is very versatile and has no trouble navigating over rough terrain or railroad tracks. We use it as a crane to unload ties and handle rail and other track material, and at times attach a 3%-cu.-yd. bucket for redistribution of ballast, cleaning ditches, etc."

#### All-wheel drive and steering

Learn more about versatile A-W hydraulic cranes. Telescoping booms swing 360°. Self-propelled, rubber mounted gasoline or diesel powered. 5 models— 110, 210, 210-P, 220 and 410. All-wheel drive and steering assure plenty of power and traction . . . outstanding maneuverability. Also available for truck or stationary mounting.

Rail crane attachment optional for on-or-off track operation. New disconnect clutch, optional with Ford 332 gas engine, permits road speed of 35 mph plus! Attachments include remote control maintenance platform, orange peel and clamshell buckets, magnet, and load-carrying platform. Contact your Austin-Western distributor today for full information or write to us.



Keeps yards, terminal areas extra clean—A-W Motor Sweepers in 2-yd. and 4 plus-yd. models.

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Power graders . Motor sweepers . Road rollers . Hydraulic crane





U-channel shape— This unique, massive shape provides tremendous gripping power. The U-shaped cross section achieves great tensile strength and gives powerful double-flange support end to end. Compare the Channeloc with other anchors.



Thorough heat-treating—Because the original bar stock is uniformly thick, the Channeloc's heat treatment is thorough and even throughout the metal structure. There are no areas of softness or brittleness in the Channeloc anchor.



Easy application — Whether applied by machine or sledge or maul, the Channeloc's two flanges provide a wide span for impact. No skewing, and no special tools required. The simplest, most economic application possible.



Ample rail base contact—The areas contacting the rail base are smoothly formed and large. They provide excellent purchase for top friction resistance to rail movement. This is another feature which increases Channeloe's gripping power.



100% tie-bearing —
All of the broad flangebearing area is against
the tie. This means it
won't disturb the spike,
because it doesn't contact the tie plate. The
Channeloc won't contribute to early tie replacement often caused
by spike damage.



Smooth contours distribute stress — Special forming operations keep contours smooth to avoid creating high-stress points. This conserves strength and keeps extra gripping power in reserve for initial application or reapplication.

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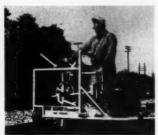
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# CHANNELOC

for new GRIPPING POWER



Minimum bollost disturbance—Channeloc's shallow profile needs minimum ballast removal—most often none at all—yet applies a broad area to the tie. This saves time and money by providing easier application.



Machine application
—invented and refined
by True Temper. This
machine has proved its
simplicity, efficiency and
ability to cut costs by
freeing manpower for
other duties. It applies
anchors with the speed
and efficiency demanded
by today's cost-conscious
railroads.



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A staff of experts—
True Temper's research
center in Geneva, Ohio
works full time on product improvement and
development. A mobile
lab tests anchors and
rail stresses under actual
service conditions. The
Channeloc and the mechanical applicator are
products of this program.

the hallmark of better products for 125 years. In shovels, hammers, garden tools, golf club shafts—scores of products produced in the millions—this broad experience in metallurgy is applied to the engil neering and manufacture of the Channeloc-

True Temper will help you see that anchors are properly applied. Contact True Temper, Railway Appliance Division, 1623 Euclid Avenue, Cleveland 15, Ohio



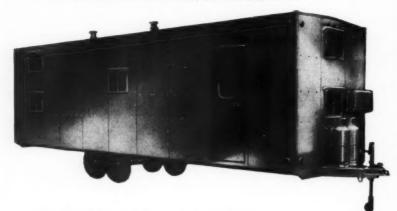
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A SUBSIDIARY OF RYDER SYSTEM, INC.

# What's the answer? (cont'd)

(Continued from page 47) governed by the existing conditions,

The cost of maintaining a track structure that is adequate for safe and efficient operation, with due regard for the conservation of track material and rolling equipment, must always be weighed against the expected benefits. Surfacing is directly related to this. However, due to many and varied conditions, no hard-and-fast rule can be followed on this subject.

# Installing slat snow fences

When installing the slat-type of temporary snow fence, how should it be supported and braced? How high above the ground should it be placed and how far from the edge of cut? Explain.

#### Use two fences

By J. S. FOLEY Supervisor of Track Illinois Central Cherokee, Iowa

On my territory we support the fences with steel posts set every 15 ft and braced with a steel post every 100 ft. The fencing is placed one foot above ground. In bad cuts we put one line 50 ft from the edge of the cut and the second is placed at 70 ft from the edge. In other locations the fences are placed at 70 ft from the edge of cut.

#### 125 ft from track

By C. C. CHINQUIST District Roadmaster Great Northern Watertown, S. D.

On the Great Northern since about 1955 we have been gradually replacing our old portable wood snow fence panels with slat-type fence, using any good material thus recovered to repair other panels and our permanent snow fences. The slat-type fence furnished is 48 in high and usually comes in rolls of 50-ft lengths, although we

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# CRIBBING

Concrete crib walls, because of their economy and adaptability, are the permanent answer to most retaining wall problems. Architecturally pleasing too.



Precast maintenance-free Amdek bridge beams are made under factory controlled conditions, delivered on schedule, erected quickly with minimum traffic tie-up.



Concrete culvert pipe is permanent. Available in the shape, size and strength required. Has superior hydraulic properties.



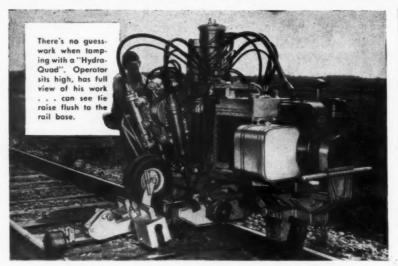


MERICAN-MARIETTA COMPANY

CONCRETE PRODUCTS DIVISION

GENERAL OFFICES: AMERICAN-MARIETTA BUILDING 101 EAST ONTARIO STREET, CHICAGO 11, ILLINOIS, PHONE: WHITEHALL 4-5000

RAILWAY TRACK and STRUCTURES



# Tamp a tie every 30 seconds with exclusive dual tamping action

You can spot tamp more roadbed per day, build smoother track...slash costs and equipment investment with a Racine "Hydra-Quad". This job-proven one-rail tamper combines vibrating action with impact force to compact ballast faster, more uniformly solid than usual single-action tampers. It delivers 1160 high-velocity impact blows per minute on each of four vibrating tamping tools...tamps an honest rate of 120 ties per hour.

#### Stabilizes ballast under base of rail

"Hydra-Quad" tamps uniformly under base of rail and to 18" on either side...in a pattern you can vary to suit your needs. It's easy to adjust for different rail heights and crooked or wider-than-average ties. Tamps over guardrail and close to switch frogs.

#### Easy removal from tracks

Built-in jack lifts entire unit for turn-around or quick set-off on rubber-tired wheels. "Hydra-Quad" is self-propelled... powered by 18 hp gas engine... starts-stops fast and travels at speeds to 12 mph. Clip and mail the coupon for location where you can see "Hydra-Quad" tamper at work... or check for literature on any machine in the Racine line including new "Oct-A-Gun" 2-rail tamper, and "Anchor Fast" the machine that applies anchors mechanically.



RAIL SAW . . . crops rail in tract . . . cuts off as little as 1/5" . . . saws 80 lb. to 155 lb. rails.



clamps easily on rail . . . aligns automatically . . . drills true as set, with power feed.



Send literature on:	
"Hydra-Quad"	Where can I see
tamper "Oct-A-Gun"	NAME TITLE
gang tamper Rail saw	RR OR CO
Anchor applicator	ADDRESS
☐ Unit tamper ☐ Rail drill	CITY STATE

## What's the answer? (cont'd)

do have some 100-ft rolls. The fence consists of wood slats woven together and held tightly in place by 5 equally spaced wire cables.

The fence is hung on steel fence posts usually about 8 ft in length. The posts are set about 10 ft apart and are driven into the ground to a depth of about 2 ft. The slat fence is fastened to the posts by means of tie wires twisted tightly around the slat and post at each point of intersection of the wire cables and fence post, so that there are 5 tie wires holding the fence securely to each fence post.

The end posts of a section of fence are braced three ways by means of guy wires running from the top of the post to stakes set in the ground about 6 ft away, one straight out from the end of the fence and the others diagonally from the front and back sides of the fence. In addition, each fifth intervening post is similarly braced, with guy wires from the top of the post to stakes about 6 ft away on both the front and back sides of the fence.

The line of snow fence is usually set up about 125 ft out from the center line of the track. The bottom of the fence should be placed about 1 ft above the ground line. The snow-fence protection should extend about 50 ft beyond the ends of the cut. The distances given here are average figures. In actual practice they will probably vary slightly in each specific location, with the practical distances determined by experience over a period of several years. Also, in some locations where severe winds are a frequent occurrence, it may be necessary to provide closer spacing of the posts and furnish additional bracing to prevent the fence from being blown down.

We supplement this snow fence protection by such means as sloping the cuts with crawler tractors; eliminating weeds and brush in and along the track and on the right of way by spraying and by cutting with track mowers and wheel tractor mowers; and by burning off the right of way.

# **Biographical briefs**

(Continued from page 10)

Louis V. Martin, 50, who was recently promoted to roadmaster on the Nickel Plate at Charleston, Ill., (RT&S, Aug., p. 10), was born at Lexington, Ill. He entered the service of the Nickel Plate in 1936 as a track

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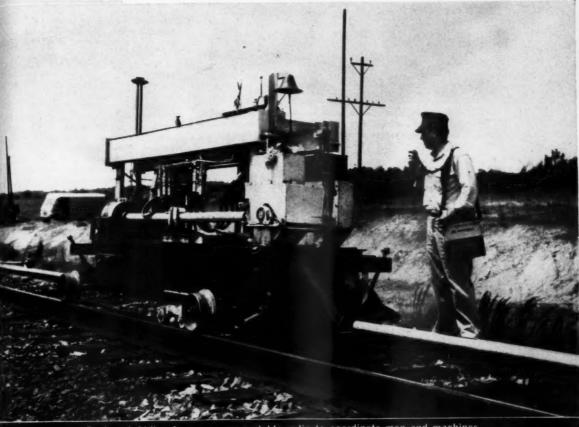
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Motorola Handie-Talkie® 2-way radiophone

# TIME-SAVING "TALKING TOOL"

for faster, safer maintenance-of-way



Seaboard Airline foreman uses portable radio to coordinate men and machines

Linking work crews spread over several miles of track . . . spanning rivers and gorges . . . providing direct, instant radio contact between foremen and other supervisory personnel—Motorola HANDIE-TALKIE portable 2-way radios add up to more work per day and less train delay.

These lightweight portables are railroad "tools"... built to meet the day in, day out demands of railroad service—anytime, anywhere. So make sure you have Motorola HANDIE-TALKIE radios on hand when and where you need them.

Your Motorola Railroad Radio Representative will show you exactly how these versatile "talking tools" can save you time, money...increase efficiency and promote safety all along the line. Give him a call or write today for complete technical information.



# MOTOROLA RAILROAD RADIO

Motorola Communications & Electronics, Inc., 4501 Augusta Bivd., Chicago 51, Illinois A Subsidiary of Motorola Inc. "HANDIE-TALKIE" is a trademark of Motorola Inc.

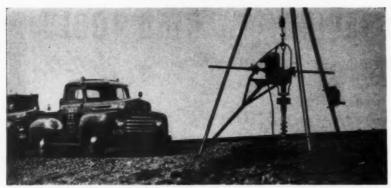


Every diesel and caboose on the Clinchfield is Motorola radio-equipped.



Flagman with tripod-mounted radio.

# FIND TROUBLE SPOTS...



5 hp Ka-Mo drill used to locate trouble area in railroad fill. Easily portable, sets up quickly. Despite small size, drill has high torque characteristics — can drill hole sixes up to 20".

# and fix them quick with a KA-MO DRILL



Same drill as above drills sixty-foot horizontal hole for "French-drain." Drill diameter is 12". When hole is completed, drill motor is reversed and used to convey gravel, sand, and ballast to facilitate drainage.

Your Ka-Mo drilling specialist has a complete line of quality equipment, plus the field know-how to help save time and cut drilling costs. Drill sizes range from 2" to 48" in diameter, and larger. Call in your Ka-Mo man, he's a good man to know.



KWIK-MIX CO.
KA-MO TOOLS DEPT.
Port Washington, Wisconsin



SEND FOR NEW ENGINEERING BULLETIN

— covers drill selection, boring capacities, and latest developments in drilling technique. Write today!

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# Biographical briefs (cont'd)

laborer at Gibson City, Ill., subsequently serving as extra gang timekeeper, assistant cost engineer, assistant extra gang foreman, chainman, rodman and instrumentman. Mr. Martin was promoted to general foreman track at Tipton, Ind., in 1950. He was serving in that capacity at Frankfort, Ind., at the time of his recent promotion.

Floyd R. Naylor, 70, who was recently promoted to special engineer, system, of the Texas & Pacific at Dallas, Tex. (RT&S, May, p. 10), was born at Hickman, Ky, and received his higher education from the University of Kentucky. Mr. Naylor commenced his railroad career on the New Orleans Great Northern in 1911, joining the T&P the following year. He was furloughed for a few months in 1913, during which time he was employed on construction of the Panama Canal. Subsequently he was promoted to assistant engineer and principal assistant engineer. Mr. Naylor was serving as assistant to chief engineer at the time of his recent promotion to the office of special engineer, system.

# Association news

# American Railway Engineering Association

The Nominating committee met at the Conrad Hilton Hotel, Chicago, on September 19 under the direction of G. M. O'Rourke, chairman. Mr. O'Rourke is assistant engineer maintenance of way (retired) of the Illinois Central, and a past president of the association. The committee nominated a slate of officers which will be announced on November 1.

The next meeting of the Board of Direction will be held on November 4 at the AAR Research Center, Chicago.

A meeting of the committee on convention arrangements will be held at the AAR Research Center, Chicago, on November 3 to make preliminary plans for the 1961 convention. The committee will also tout the convention facilities of the Conrad Hilton Hotel, the hotel headquarters for the 1961 convention, and McCormick Place, Chicago's new exposition center, where the annual association luncheon and most or all committee meetings will be held.

Two standing committees have scheduled meetings to be held in October. They are: Iron and Steel Structures, October 26-27, NYC office, New York; and Cooperative Relations with Universities, October 14, AAR Research Center, Chicago.

# Northwest Maintenance of Way Club

The next meeting of the club will be held on October 27 at Coleman's Cafe, 2239 Ford Parkway, St. Paul. The social hour will commence at 5:30 pm with dinner starting at 6:30.

The program will consist of a motion picture entitled "Wood at Work." The basic message of the film is the conserva-



MID-WEST FORGING & MANUFACTURING CO.

General Offices: 38 S. Dearborn St., Chicago 3, III. • Manufacturing Plant: Chicago Heights, III. • Distributors: North American Supply Co., Cleveland, Ohio; William Allen, Denver, Colo.; John O'Brien, St. Paul Minn.; W. T. Richards, San Francisco, Calif.; G. C. Hunt & Co., Atlanta, Ga.

MILWAY TRACK and STRUCTURES

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OCTOBER, 1960

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# COMPRESSED AIR DRYERS

STOP FREEZING OF AIR LINES THROUGHOUT YARDS AND OUTDOOR EQUIPMENT



The VAN-AIR DRYER not only extracts condensed water from compressed air (which stops freezing of air lines during winter temperatures) -much more important it intercepts residual vapors, acid fumes and microscopic solids which flow downstream from reservoir. By reducing these elusive elements the Dryer prevents the incessant corrosion or varnishing of internal metal surfaces exposed to the flow of air.

The VAN-AIR needs little space. is automatic, requires no heat or power-never needs regeneration. It delivers air dry, pure, non-toxic— and operates at the very nominal cost of

#### LESS THAN 1-CENT per 18,000 CU. FT.

ENGINEERS! Look into the sizeable savings in maintenance costs and parts replacements now practicable with Van-conditioned air. Ask for brochure which explains the economical Van-Air method-tested, proven and used in many hundreds of industrial applications.

Built in 35 capacities there is a Van-Air Dryer properly rated to treat any volume of compressor output-from total air for largest yard or shop operation down to minimal air for brake testing, remote tools, spraying units, etc. Ask for details.

#### VAN PRODUCTS CO. . MFRS.

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## Association news (cont'd)

tion of timber reserves through forestry and scientific wood preservation. The role of wood in modern homes, highways and industries is portrayed.

#### Maintenance of Way Club of Chicago

The first meeting of the season will be held on October 24 at the Hamilton Hotel, Chicago. As usual, the social hour will start at 5:30 pm, and dinner will be served at

The program will consist of a panel discussion of the subject, "Continuous Welded Rail—A Progress Report." Moderator will be C. E. Weller, assistant engineer maintenance of way, Illinois Central, Chicago. Panelists will be W. A. Cruse, engineer maintenance of way, Great Northern, St. Paul: R. H. Beeder, chief engineer system, Santa Fe, Chicago; and G. M. Magee, director of engineering research, Engineering Division, AAR, Chicago.

## Mississippi Valley Maintenance of Way Club

The next meeting of the club will be held on October 10 at the Ambassador Kingsway Hotel, 108 North Kingshighway, St. Louis, Mo. Welded rail will be the subject of the program, which will be presented by A. H. Galbraith, welding gineer, Santa Fe. A motion picture will shown illustrating Santa Fe practice. T social hour will commence at 6:00 pm, w dinner starting at 7:00.

## Metropolitan Maintenance of Way Club

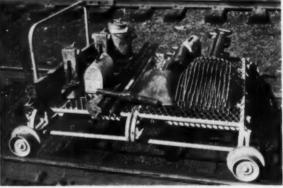
The first meeting of the season will held on October 27 at the Railroad the chinery Club, 30 Church St., New York The social hour will commence at 5:30 m with dinner starting at 6:30.

The principal speaker will be J. A. C. wood, assistant chief engineer-maintenance Baltimore & Ohio. The subject of his to will be "Economics of Track Remova"

#### **Association of Track** and Structure Suppliers

The annual meeting of the association wa held at the Conrad Hilton Hotel, Chicaon September 21. It took place on the fire day of the concurrent annual conventions the Roadmasters' and Bridge & Building Associations.

With President L. E. Flinn (Dearbon Chemical Company) presiding a number items of routine business was considered In the election of officers Ray T. Johnson Jr., (Mid-West Forging & Manufacturing Co.) was advanced from first vice president to president; P. J. Wolf (Maintenance Equipment Company) was moved up from



#### EASY-ROLLING FAST MOVER

You can lead this handy, easy-rolling NOLAN TOOL and SUPPLY CAR with up to 2000 lbs. of tools, ties, rails and supplies . . and transport them quickly and safely from truck or bus to the job. Accepted as the standard railway teel and supply car by the leaders!

All tubular high-carbon steel construction for the trouble-free heavy-duty service. Car breaks conveniently in the center into two sections for easy handling and transportation. Each section can be used as a truck seat.

The deck is heavy mesh-expanded steel. Removable handle can be used at either end. Ball bearing cast steel wheels.

Platform Size 48" x 45" Height Above Rail 8"

Weight 140 lbs. complete
Write for complete illustrated literature and prices. FREE complete catalog of entire NOLAN railway supply line.

# NOLAN TRACK DOLLY

The fast, safe, easy way to tram heavy rails, ties, supplies, tools, re ers, etc. Tubular high-carbon steel struction. The deck is heavy mest panded steel. Removable handle.

STANDARD DOLLY Length Width Rail Weight 501/2 in. 151/2 in. 61/8 in. 88 lbs. 15½ in. 078 in. INSPECTOR'S DOLLY 6 in. 60 lbs.



THE HOLAN COMPANY, 166 Pennsylvania St., Bowerston, Ohio

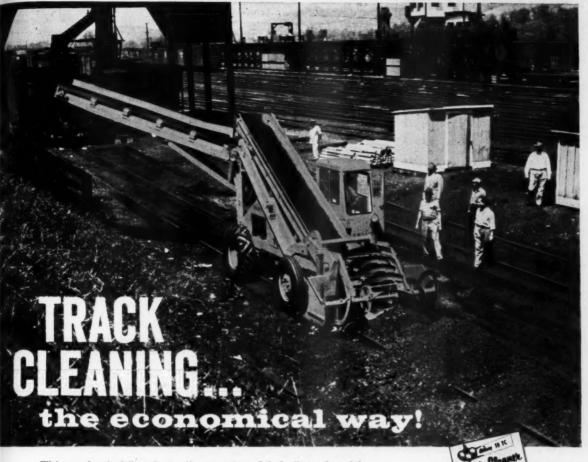
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This mechanical "road gang" never tires. It's built to do a job-track cleaning—and do it better, at lower cost, than any other

The Athey 18TC Track Cleaner does its work in one pass, and makes track maintenance costs take a nosedive. In three passes it cleans two tracks on 12 or 13 foot centers, including the intertrack area. Cleans the full tie length, discharges into waiting cars. The 55° swing on the 18' swivel conveyor loads up to 15'7", well within reach of even the highest cars.

Versatility means added savings. The Athey 18TC doubles as a loader, stockpiles up to 10 yds. per minute. On snow removal it gets rid of 25 to 40 yds. per minute.

If you want to save money-real dollars-and-cents moneylook into the 18TC. Write for facts. And write now!



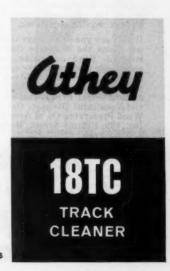
#### **CONVERTS TO BALLAST RECLAIMER!**

Add extra versatility to the Athey 18TC with the new Ballast Reclaimer Conversion Kit. Fits all Athey Track Cleaners now in use. Brings new economy to road maintenance by providing likenew ballast at less than half the cost of new ballast. Write for full information.

UCTURES

Athey PRODUCTS CORPORATION, 5631 WEST 65TH STREET, CHICAGO 38, ILLINOIS





TROUBLE AHEAD

# DRIFT PIN A-DRIFT



# ...and OSMOSE INSPECTION Spotted it in Time

The area surrounding drift pins and bolt holes is only one of the many possible decay spots which are hazards to the safety and service of timber bridges and trestles — and which can lead to costly replacements. And there's one best way to solve all these problems — OSMOSE Bridge Inspection and Treatment!

Not only do you get thorough, expert examination and evaluation, from groundline of pilings to caps and stringers, but effective, in-place treatment that can double the expected service life of your wooden structures.

It will pay you in all ways to find out about the exclusive Osmose method. Find out, also, how amazingly moderate is the cost of keeping your older bridges in place, safe and sound. At no obligation, write: Bridge Inspection and Treatment Division, Osmose Wood Preserving Co. of America, Inc., 989 Ellicott Street, Buffalo 9, New York.



## Association news (cont'd)

(Continued from page 56)

second vice president to first vice president; H. R. Deubel (Chicago Pneumatic Tool Company) was advanced from third vice president to second vice president; A. L. Fridley (Unit Rail Anchor Corporation), treasurer, was elected third vice president; C. L. Rager (Fairmont Railway Motors), secretary, was elected treasurer; and J. L. Beven, Jr., (Remington Arms, Inc.), a director, was elected secretary.

Directors elected to serve three-year terms are: W. C. McKay (Kershaw Manufacturing Company, Inc.); E. C. Gunther (Duff-Norton Manufacturing Company); and Robert Evans (Armco Drainage & Metal Products, Inc.). Mr. McKay and Mr. Gunther were re-elected. In addition, T. F. Kennedy (Sperry Rail Service) was elected a director for one year to fill out the unexpired term of Mr. Beven.

# Supply trade news

ALLIED CHEMICAL — Harold R. Schneider, executive assistant for agricultural chemicals of the General Chemical Division, has been promoted to assistant sales manager for agricultural chemicals of the division, according to an announcement by John L. Damon, director of agricultural chemicals.

AMERICAN BRAKE SHOE COMPANY—John F. Ducey has been appointed director of acquisitions of this company. Mr. Ducey has been manager-new products for the Railroad Products Division, which responsibilities will be included in his new position. In his new capacity Mr. Ducey will investigate companies for possible acquisition as part of the company's program of growth through research and acquisition.

DEARBORN CHEMICAL COMPANY — Richard L. Moore has been appointed sales representative at the company's Illinois-Wisconsin district headquarters at Des Plaines, Ill. He will service railroads using Dearborn's water treatment products and equipment, cleaners and protective coatings. Prior to his appointment Mr. Moore was a water chemist for the Illinois Central.

FLANNERY PRODUCTS CORPORATION—The following have been appointed to handle sales on a regional basis: William E. Evans at Pittsburgh, Pa.; Charles E. Barnes at San Francisco, Calif.; and Otto Bussenius at Chicago.

#### CLASSIFIED ADVERTISEMENT



In addition, the following have been appointed representatives: T. C. Johnson at Chagrin Falls, Ohio, to handle sales in the Cleveland area; and Harold L. Emerson at St. Louis, Mo., to handle sales in the § Louis area.

RACINE HYDRAULICS & MACHINERY, INC.—
A change in corporate trademark has been announced by this company. The new trademark is oval in shape and consists, in the upper segment, of a silver futuristic "k" on an ochre field and, in the lower segment of a silver "Racine" on solid black.

The announcement states that the neutrademark represents an exchange for the "Racine-Seco" label adopted following the quisition of a wholly-owned subsidiary, the Simplex Engineering Company, Zanesville Ohio, several years ago. It is reported that the Simplex and Racine product lines not are thoroughly integrated under the parentirm's standard.

SPERRY PRODUCTS COMPANY — Philip I Parker has been appointed general sale manager of this company, which is a division of Howe Sound Company, Danbury Conn. Mr. Parker was formerly executive president of Peterson Machine Tool Inc., Merriam, Kan., which was recent acquired by Sperry Products.

TRUCK EQUIPMENT COMPANY — The Concordion has announced acquisition of the Truck Equipment Company, Denue Colo., manufacturers of Truco material handling equipment for railroads and unities.

# INAL SPRAY STARTING FLUID\*



Starts dieset and gasoline engines (from the smallest to the largest) down to 65° F, below zero - Starts in seconds - Excellent in humid weather too - Millions of cans sold - See your automotive jobber or farm equipment dealer.

\*The inventors of spray starting fluid. Patent No. 2,948,595



Ask for the can with the "balky donkey" trademark

SPRAY PRODUCTS CORPORATION

P.O. Box 1988 . Camden 1, N.J.

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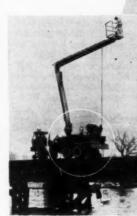
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1, N.J.

GRACO
Hydra-Spray

- 1. Eliminates virtually all overspray... greatly reduces chance of damage claims.
- 2. Gives better coverage ... permits heavier, one-coat film build-up with high solids materials.
- Eliminates bounce-back
   ... gives complete coverage over angular and boxlike surfaces.
- **4.** Simplified equipment... no atomizing air . . . allows use of smaller air compressor.





GRACO Hydra-Spraymoster for field application of heavy protective coatings

RACO RAILWAY DEPARTMENT

GRAY COMPANY, INC. Engineers and Manufacturers 718 Graco Square, Minneapolis 13, Minnesota

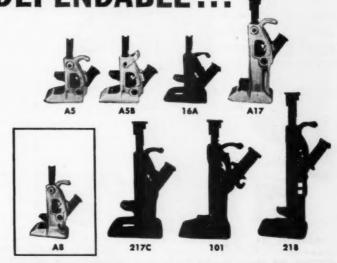
Factory Branches: New York • Philadelphia • Detroit • Chicago Atlanta • Houston • San Francisco
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GRACO ENGINEERS are prepared to help you in the design of your paint and material spray assemblies—whether mobile or stationary. This service provides complete blueprints with tills of materials, as well as detailed installation information. Your Graco Railway Representative will be glad to explain the many benefits of both the equipment and the engineering service. Write today for literature!

# WORLD'S MOST DEPENDABLE SIMPLEX TRACK JACKS

New Model No. A8, eliminates need for both high and low lift jacks. 15-tons capacity, 15\%" high with 7\%" lift. The fulcrum center is 3" higher than 5" lift jacks. Has 2" min. toe-lift height, weighs only 34 lbs.





- Most complete line—14 models
- Available with malleable or aluminum alloy housings
- Large area (2½"x3¼") lifting toe has non-slip grooves
- Lifting ranges from 5 inches to 19 inches
- Thumb guards and trips on both sides
- Lowest too height—less digging or pounding to set jack

ALSO AVAILABLE—Rail Pullers and Expanders, Tie Spacers, Rail Dollies, Tie Removers and Replacers, Bridge Jacks, Jack Supports, Push and Pull Jacks, Steamboat Ratchets and a complete line of Hydraulic Jacks—Rams, Pumps (hand or powered), Pullers and Accessories.

TEMPLETON, KENLY & CO. • 2543 GARDNER RD. • BROADVIEW, ILLINOIS

# Dependable Illumination for Track Motorcars

Requiring Head Lamp and Taillights



# Beg Begge Lighting Equipment

Ideal for night work on motorcars not equipped with generators. Big Beam Track Motorcar Lighting Equipment consists of portable battery operated headlight with lock-type hold-down bracket, 10' lead wire and either one or two taillights. Control switch on lamp head. Operates on

four standard No. 6 dry cell batteries. For all weather service. Many railroads are using this unit as standard equipment on their track motorcars.



Big Beam Hand Lamps for Night Maintenance Repair • Inspection







Model No. 1711C Latest clamp-on type-4 models. Powered by one 7½-V dry cell battery. With sealed beam or incandescent type bulb.



Model No. 166
Powered by one
standard 6-V lantern
battery. With sealed
beam or incandescent type bulb.
Also available with
flashing beacon.

WRITE FOR LITERATURE AND PRICES

No Finer Hand Lamps Made . . . Anywhere in the World

U-C-LITE MFG. CO. 1057 W. Hubbard Street Chicago 22, Illinois

Canada: Bernard Marks & Co., Ltd., 32 Alcorn—Toronto 7, Ontario

# Helps from Manufacturers

The following compilation of literature—including pamphlets and the sheets—is offered free to railroad men by manufacturers to the microad industry. To receive the desired information, write direct to find manufacturer.

SPIKE HOLE INSERT PLUGS. A circular is available which describes a plastic spike hole insert plug. It gives the dimension of the plug and explains how the plug can be used to extend the life of spike-killed ties. The manufacturer states that the plug is made of a very tough and slightly resilient plastic that has the ability to resist pressures and working stresses of the track as we as the destructive elements of nature. (Write: Railroad Rubbe Products, Inc., Dept. RTS, 4538 Main Ave., Ashtabula, Ohio.

BACKHOES. A new 2-color, 4-page bulletin is available which describes and illustrates the Schield Bantam line of backhoe at tachments and options for its crawler-mounted, carrier-mount, and self-propelled crane-excavators. Designated BH-60-1, the bulletin describes the features of each backhoe, including specifications and digging ranges. On-the-job photographs show the attachments being used with the three types of Bantam machines (Write: Schield Bantam Company, Dept. RTS, Waverly, Jones

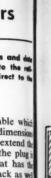
TRACK SURFACING. The Hayco Op-tronic Track Finishin System is described and illustrated in a new booklet. The min elements of the system, the sighting, raising and target bugge are described along with an explanation of how each is used in surfacing track. The booklet points out the features and advantages of the new system and includes specifications. (Write: The Brice Hayes Company, Dept. RTS, 6710 Northwest Highway Chicago 31.)

EARTHMOVING EQUIPMENT. A new 12-page booklet available which describes and illustrates the 966 Series A Wheek Traxcavator. Designated Form 33915, the booklet points out the operating and mechanical features of the machine, including 140 hp turbocharged diesel engine, highly responsive power train for fast work cycles, 41-deg bucket breakout for heaped loads, extending bucket reach and unit construction for easy servicing. A drawing is included which shows the dimensions of the 966 and graph shows the lifting capacity of the standard machine. Specifications are given. Attachments available for use with the chine are described and illustrated. (Write: Caterpillar Tractor Company, Dept. RTS, Peoria, Ill.)

REGULATORS AND PORTABLE MANIFOLDS. Oxweld in dustrial gas regulators and portable manifolds are described an illustrated in a 16-page catalog. Designated Form 55-085, the catalog includes complete specifications and ordering information for regulators that are available for use with all industrial gases and completely portable manifolds for use with oxygen and acetylene. Recommended uses are included in the description of each regulator. Available inlet and outlet connections are listed (Write: Linde Company, Dept. RTS, 270 Park Ave., New Yor 17.)

PORTABLE SAND BLASTER. The new ALC Model B "Sand Jet" sand blaster is described and illustrated in a two-page bulls tin. Designated No. 602, the bulletin gives complete specifications and describes the features of the unit, including pistol-grip-typ blast gun and finger-tip trigger control. Standard and optional equipment are listed. (Write: ALC Company, Dept. RTS, Median Ohio.)

LIFTING JACKS. The complete line of Duff-Norton lifting jack for industry is described and illustrated in a new four-parbrochure. Units described include hydraulic, ratchet lowering cable reel, track, journal, pole pulling, screw, speed controlled, behase screw, traversing, air motor, push-and-pull, mine roof and timbering and governor controlled jacks. Other equipment described includes hydraulic rams and pumps, motor attachments and trench braces. Specifications are given for each unit. (Write Duff-Norton Company, Dept. RTS, 4 Gateway Center, Pittsburg, 22, Pa.)



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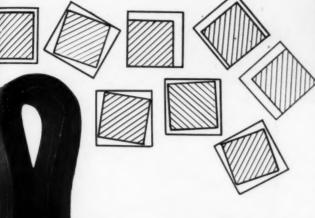
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lifting jack four-pag t lowerin rolled, bel e roof as ipment d attachmen nit. (Write

STRUCTURE

Troubled with loose fit of spikes in tie plate holes?... Plate cutting of ties ... wave in the rail . . . Irregular gage?



The common %" square shank cut spike may take any one of the various positions shown in cross-section at the line spike holes of the tie plate, which are scattered about this page. A reduction in size of the holes will not correct this trouble, as exhaustive tests of cut spikes in the smaller 11/16" square lag holes have proved.

Only LOCK SPIKES completely fill the holes by compression of the spread shank-firmly holding the plates to the ties under spring tension. Plate cutting is overcome-Rail is held to gage and line.

Rail Lock Spikes and Gage Lock Spikes are rail spikes as well as plate fastenings. Rail Lock Spikes also take up the play between the width of the rail base and the tie plate shoulders. The slight protrusion on the spike head at the tie plate surface binds against the edge of the rail base and forces the opposite shoulder into contact with the rail base. This action slightly skews the tie plates, as shown in the illustration below, and binds the rail at all four corners of the plate shoulders, as indicated by the arrows. Complete elimination of play in the spike holes of a tie plate and between the shoulders is accomplished.



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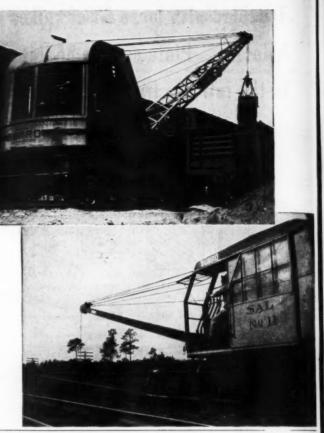
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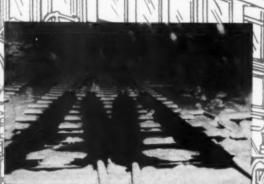
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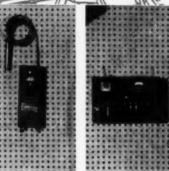
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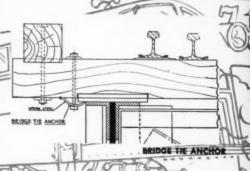




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